

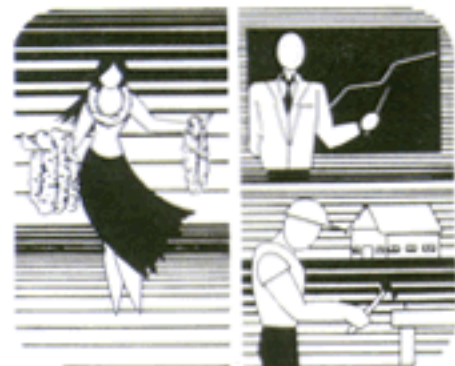
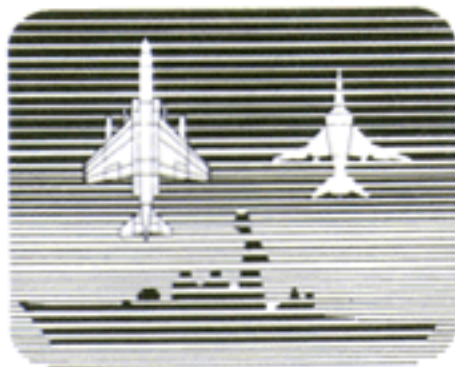
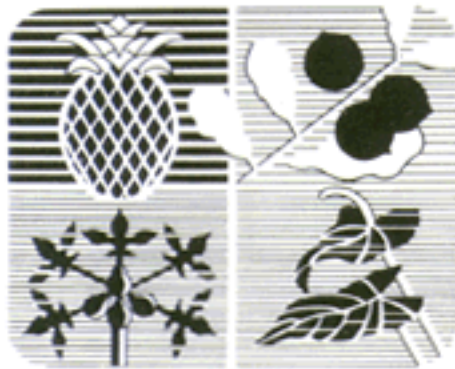


THE HAWAII INPUT-OUTPUT STUDY

1992 Benchmark Report



December 1998



THE HAWAII INPUT-OUTPUT STUDY:

1992 Benchmark Report

Research and Economic Analysis Division
Hawaii Department of Business, Economic Development, and Tourism

December 1998

This report has been cataloged as follows:

Hawaii. Dept. of Business, Economic Development and Tourism. Research and Economic Analysis Division.

The Hawaii input-output study: 1992 benchmark report. Honolulu: 1998.

1. Input-output analysis-Hawaii. 2. Hawaii-Economic conditions
HB142.H3.1998

TABLE OF CONTENTS

Preface	6
1. Introduction.....	7
2. The Input-Output Model	8
Basic Framework.....	8
Illustration	9
Direct Requirements Table	12
Total Requirements Table	14
Input-Output Multipliers	15
Output Multipliers.....	16
Income Multipliers	16
Employment Multipliers	17
Type II Multipliers	18
3. Industry Classification, Data Sources, and Estimation Procedures	20
Industry Description for 1992 Hawaii Input-Output Table.....	20
Data Sources and Estimation Methodology	20
Output	21
Value Added.....	24
Labor Income	25
Other Value Added.....	25
Final Demand.....	25
Personal Consumption Expenditures.....	27
Private Domestic Investment	27
State and Local Government Expenditures	28
Federal Defense Expenditures.....	28
Federal Non-defense Expenditures.....	28
Visitor Expenditures.....	29
Other Exports.....	29
Imports	29
Employment.....	30
4. Balancing Procedure	31
5. I-O Multipliers.....	35
1992 Input-Output Transactions Table.....	35
1992 Input-Output Multipliers	35

6. Impact Analysis With An Input-Output Model.....	42
Direct Output Impact.....	42
Indirect Output Impact	43
Induced Output Impact.....	43
Income Impacts	44
Employment Impacts	46
Considerations and Cautions Regarding Impact Analysis.....	48
 References	 51
 Appendix A. The 1992 Hawaii State Input-Output Table	 54
Appendix B. Comparison Between 1987 and 1992 Hawaii Input-Output Categories	88
Appendix C. Comparison Between 1992 Hawaii, 1992 IMPLAN and 1987 Input-Output Categories.....	92

LIST OF FIGURES AND TABLES

Figure 2.1. An Overview of an Input-Output Table	9
Table 2.1. 1992 Aggregated Input-Output Table for Hawaii.....	10
Table 2.2. 1992 Aggregated Direct-Requirements Table for Hawaii	13
Table 2.3. 1992 Aggregated Total Requirements Table for Hawaii (Type I).....	13
Table 2.4. Direct, Indirect, and Total Effects of Type I Output Multiplier for Agriculture.....	16
Table 2.5. Calculation of Income and Employment Multipliers for Agriculture	17
Table 2.6. 1992 Aggregated Total Requirements Table for Hawaii (Type II).....	19
Table 2.7. 1992 Aggregated Type I and Type II Output, Income, and Employment Multipliers for Hawaii	19
Table 3.1. Value added in Input-output Account and BEA Estimates, 1992	24
Table 3.2. Relationship between GSP Account and the Input-Output Account: 1992	26
Table 5.1. 1992 Hawaii State Input-Output Multipliers	38
Table 6.1. Construction Expenditures of Hawaii Convention Center	42
Table 6.2. Direct and Indirect Output Impact of Hawaii Convention Center Construction	43
Table 6.3. Induced Output Impact of Hawaii Convention Center Construction.....	44

Table 6.4.	Relationship Between Output Impacts	44
Table 6.5.	Income Impact Using Direct-Effect Income Multiplier.....	45
Table 6.6.	Income Impact Using Final-Demand Income Multiplier	46
Table 6.7.	Employment Impact Using Direct-Effect Employment Multiplier	47
Table 6.8.	Employment Impact Using Final-Demand Employment Multiplier	48

PREFACE

This 1992 Benchmark report is the fifth in a series of input-output (I-O) studies of Hawaii's economy prepared over the past three decades by the Department of Business, Economic Development & Tourism (DBEDT). It succeeds studies conducted for 1967, 1977, 1982 and 1987. These years correspond to comprehensive surveys of business transactions conducted by the U.S. Bureau of the Census, which provide key data for updating the model.

This publication is designed to serve as a technical report for researchers and knowledgeable users of such economic studies. DBEDT is preparing a summary of the I-O study targeted towards the general reader. The summary report will be published in the Department's periodic report, *Hawaii's Economy*.

The report was prepared in the Research and Economic Analysis Division of DBEDT, by Dr. Xijun Tian, under the direction of Dr. Pearl Imada Iboshi, Division Head. For its invaluable contribution to this research project, the Department gratefully acknowledges the collaboration of the Department of Agricultural and Resource Economics, University of Hawaii College of Tropical Agriculture and Human Resources. In particular, the Department thanks Drs. PingSun Leung and Stewart Nakamoto for their assistance.

1. INTRODUCTION

The I-O model is designed to show the role and importance of each industry in the economy in terms of its output, value added, income, employment, and the industry's interaction with the rest of the economy. The model and its inter-industry data tables are useful tools to analyze a wide range of problems related to economic development by providing a comprehensive and detailed set of accounts, showing sales and purchases in Hawaii's economy. These data provide the factual basis for estimating output, income and employment multipliers, which are frequently used in economic impact analysis. The input-output approach also provides a useful framework for long-term economic and demographic forecasting as well as for practical policy analysis.

Each I-O update study conducted over the years has provided a better picture of the state's economic structure. The 1992 Hawaii I-O model, for instance, has not only updated the 1987 model, but has added considerably more industry detail than was previously available. The 1992 tables now consist of 118 sectors as compared with 60 sectors in the 1987 model. The agriculture, food manufacturing, transportation & communication, retail trade, services, and government sectors are presented in much greater detail in the 1992 I-O tables.

The remainder of this report is organized as follows. Section 2 provides a brief description of input-output analysis and multipliers using a simplified version of the 1992 Hawaii I-O table. Section 3 provides a description of industries, data sources, and methodology. Section 4 presents the procedure employed in balancing the inter-industry transactions matrix. Sections 5 and 6 present a discussion of the multipliers derived from the 1992 I-O model and provide examples of how impact analyses are conducted using the I-O tables. The Appendices provide a full version of the 1992 I-O table, comparisons between the 1987 and 1992 Hawaii input-output formats, and details of the 1992 Hawaii input-output industries and sectors.

2. THE INPUT-OUTPUT MODEL

BASIC FRAMEWORK

An input-output (or I-O) model depicts a comprehensive and detailed account of sales and purchases of goods and services among producing industries, final consumers (households, visitors, exports, government, etc.), and resource owners (labor, capital, land) in an economy during a particular time period, usually a year. The information from the I-O model is presented in a format called the input-output table.¹

A very general and simplified overview of the input-output table format is shown in Figure 2.1. A simplified I-O table for Hawaii is shown in Table 2.1. Listed down the first column of the I-O table format are the producing or “selling” industries and sectors of the economy. Across the top row of the table are listed the purchasing or “buying” industries and sectors. Inside the table, the intersection of each row and column shows how much the industry to the left sold to the industry (or sector) directly above. As Figure 2.1 shows, the I-O table is divided into four major components (also known as blocks or quadrants): Inter-industry transactions (block A); Final demand (block B); Value added (block C); and Transfers (block D). Each block consists of a series of rows and columns for individual industries and sectors as shown in Table 2.1. Because they represent the transaction profiles of industries and sectors, the rows and columns are often referred to as “row sectors” and “column sectors.”

Block A, the inter-industry transaction portion of the table, accounts for intermediate sales and purchases of goods and services among the industries in the economy. Reading across a row of the transaction table shows the sales by the row sector to the various column sectors, i.e. inter-industry sales. Similarly, reading down a column shows the inter-industry purchases by the column sector from the various row sectors.

Block B shows the sales of commodities and services by each industry to final users, namely households (personal consumption expenditures or PCE), federal, state and local government units (government expenditures), visitors (visitor expenditures), investors (private investment), and exports.

Block C shows the primary payments to the owners of resources used in production – payments for labor, land and equipment rental, business tax payments to government, capital depreciation, payment for business loans, payments for imports of goods and services for intermediate use.

Block D shows the transactions between the final demand (column) sectors and the final payments (row) sectors. This involves payments to final payment sectors by final demand sectors as well as transfers among government sectors. Block D also records the total imports of goods and services by the final demand sectors.

¹ Analytical details of input-output analysis can be found in Miller and Blair (1985) and the works of many other authors (see Resources section).

In the input-output accounting framework, receipts of sellers must balance the expenditures of buyers as in a double-entry bookkeeping system. By that convention, total output (sales, including final demand) is equal to total input (purchases, including final payments) for each industry and sector in the table.

Figure 2.1. An Overview of an Input-Output Table

	Industries	Final Demand Sectors	Total
Industries	Block A Inter-industry Transactions	Block B Final Demand (Sales to households, visitors, government, investment, and exports)	Total Industry Output (Sales)
Final Payments Sectors	Block C Primary Payments (Payments for labor, rental, loans, taxes, and imported goods)	Block D Transfers and Imports	Total Payments
Total	Total Industry Input (Purchases)	Total Expenditures	

ILLUSTRATION

To illustrate the I-O accounting process, consider the aggregated, eight-industry transactions table for 1992 shown in Table 2.1. This table contains the same information as the complete transaction table found in Appendix Table A, but in aggregated form. The table contains:

Eight industry groups

- Agriculture
- Mining and construction
- Manufacturing
- Finance, insurance, and real estate
- Transportation and utilities
- Trade
- Services
- Government

Two final demand sectors

- Personal consumption expenditures (PCE)
- Other final demand (investment, government, visitors, other exports)

Table 2.1. 1992 Aggregated Input-Output Table for Hawaii (in \$million)

	Agri- culture	Mining and Construction	Manu- facturing	Transportation and Utilities	Trade	Finance Insurance & Real Estate	Services	Government	Intermediate Total	Personal Consumption Expenditures	Other Final Demand	Total Industry Output
Agriculture	75.6	2.1	306.5	0.0	23.0	89.5	27.3	0.0	524.0	76.3	231.1	831.90
Mining and Construction	2.1	26.0	12.5	27.6	12.2	205.8	58.9	7.5	352.6	0.0	3,488.7	3,841.10
Manufacturing	60.9	240.3	211.5	635.8	256.4	104.3	286.6	20.4	1,816.2	765.0	1,363.4	3,949.80
Transportation and Utilities	19.9	138.1	94.9	541.4	278.4	273.2	392.3	148.9	1,887.1	926.2	2,364.0	5,175.60
Trade	22.4	191.7	115.2	86.9	150.1	68.0	226.2	16.1	876.6	2,986.8	3,584.4	7,445.50
Finance, Insurance, and Real Estate	18.4	22.2	40.8	128.7	220.3	1,230.2	525.6	61.5	2,247.7	4,773.4	1,674.3	8,693.70
Services	8.9	190.8	104.6	156.2	466.2	414.6	690.0	97.0	2,128.3	4,471.7	3,757.9	10,350.70
Government	5.0	3.0	51.9	57.4	130.6	42.5	227.1	0.0	517.5	204.9	6,378.1	7,100.50
Intermediate Total	213.2	814.2	937.9	1,634.0	1,537.2	2,428.1	2,434.0	351.4	10,350.0	14,204.3	22,841.9	47,396.20
Labor Income	338.2	1,842.6	810.6	1,673.6	3,195.4	1,927.6	5,203.6	5,172.5	20,164.1	0.0	-	20,164.10
Other Value Added	161.9	297.8	417.8	1,063.6	1,863.8	3,796.3	1,316.7	1,479.8	10,397.7	0.0	-	10,397.70
Total Imports	118.6	886.5	1,783.5	804.4	849.1	541.7	1,396.4	96.8	6,477.0	4,308.8	4,322.3	15,108.10
Total Industry Purchase	831.9	3,841.1	3,949.8	5,175.6	7,445.5	8,693.7	10,350.7	7,100.5	47,388.8	18,513.1	27,164.2	93,066.10
Total Employment (jobs)	22,790	40,868	22,687	46,160	160,983	65,059	221,303	177,956	757,806	-	-	-

Three final payment sectors
 Labor income
 Other value added
 Imports

Table 2.1 summarizes transactions (sales and payments) among various sectors of Hawaii's economy in 1992. Except for the last row of the table, the data are in millions of current dollars. Although it is not an actual component of the I-O transactions table, the last row shows the employment data by industry, which are used at a later stage to calculate employment "multipliers." Employment is defined as the total number of wage and salary plus self-employed jobs in each industry.

Reading across a row sector shows sales by the row sector to the various column sectors. For example, in 1992, total output for agriculture amounted to \$831.9 million. Of the total agricultural sales, total inter-industry sales to agriculture itself and other industries amounted to \$524.0 million. The largest amount of interindustry agriculture sales (\$306.5 million) was to manufacturing. Sales to final demand sectors totaled \$307.4 million, including \$76.3 million to Hawaii residents and \$231.1 million to other final demand sectors (government, visitors, investment and exports).

Reading down a column shows the purchases by the column sector from the various row sectors. Purchases by agriculture included \$75.6 million of commodity purchases from agriculture itself, \$137.6 million worth of commodities from other industries, \$338.2 million as payments to households, \$161.9 million as other value added, and \$118.6 million of imported commodities. Because an input-output transactions table is a double entry accounting system, total sales (row total) is equal to total purchases (column total) for each industry. Thus, both total purchases and sales for agriculture equal \$831.9 million. In 1992, there were 22,790 wage and salary plus self-employed jobs in Hawaii's agricultural sector.

Inter-industry sales and payments flows in Table 2.1 can be expressed as a system of 8 equations, representing the distribution of each sector's total output (sales) among various industrial purchasers and final demand sectors.

$$\begin{array}{ll}
 X_1 = Z_{11} + Z_{12} + \dots + Z_{18} + Y_1 & \text{Agriculture} \\
 X_2 = Z_{21} + Z_{22} + \dots + Z_{28} + Y_2 & \text{Mining and Construction} \\
 \cdot & \cdot \\
 \cdot & \cdot \\
 \cdot & \cdot \\
 X_8 = Z_{81} + Z_{82} + \dots + Z_{88} + Y_8 & \text{Government}
 \end{array}$$

The X's in the equations represent an industry's total output; Z's are sales to industries; and Y's are total sales to the final demand sectors, including personal consumption and others.

Direct Requirements Table

The next step in input-output analysis after construction of the transactions table is the derivation of the “direct requirements” table. Elements in each column of the direct requirements table are obtained by expressing each column entry of the transactions table as a proportion (coefficient) of the corresponding column total. The coefficients of the direct requirements table show the amount of input (purchases) required by the column sector from each of the row sectors (sellers) to produce *one dollar* of output from that column sector. The direct requirements computations are usually limited to the columns containing the producing industries of the transactions table. Thus, most of the final demand sector columns are usually omitted. However, the personal consumption expenditures (or household) sector column may be treated as a producing sector since a substantial portion of household income is injected to the economy in the form of purchases from industries. The direct requirements column for households is obtained by dividing each entry in personal consumption expenditures in Table 2.1 by total labor income in the economy.

Table 2.2 represents the direct requirements table for the 8 industries and the household sector contained in Table 2.1. The first column in Table 2.2 shows various input requirements (in fractions of a dollar) needed to produce one dollar of agricultural output in 1992. For instance, to produce a dollars worth of output, agriculture used about 9 cents worth of commodities from within the agriculture industry itself, and about 2 cents each from transportation and utilities, trade, and finance, insurance and real estate. In addition, agriculture paid 41 cents per dollar of output for labor, 19 cents for other value added inputs, and 14 cents for imported commodities.

In mathematical terms, each fraction of a dollar (called a coefficient) in the direct requirements table is usually designated as a_{ij} , and represents the purchase of column sector j from row sector i required to produce a dollar of output in sector j . The a_{ij} 's are derived by dividing each column entry in the transaction table, Z_{ij} by the corresponding column total, X_j , or

$$a_{ij} = Z_{ij}/X_j$$

Using this definition of a_{ij} , the previous system of inter-industry equations can be rewritten as

$$\begin{aligned} X_1 &= a_{11}X_1 + a_{12}X_2 + \dots + a_{18}X_8 + Y_1 \\ X_2 &= a_{21}X_1 + a_{22}X_2 + \dots + a_{28}X_8 + Y_2 \\ &\cdot \quad \cdot \quad \cdot \quad \quad \dots \quad \cdot \quad \quad \cdot \\ &\cdot \quad \cdot \quad \cdot \quad \quad \dots \quad \cdot \quad \quad \cdot \\ &\cdot \quad \cdot \quad \cdot \quad \quad \dots \quad \cdot \quad \quad \cdot \\ X_8 &= a_{81}X_1 + a_{82}X_2 + \dots + a_{88}X_8 + Y_8 \end{aligned}$$

Table 2.2. 1992 Aggregated Direct Requirements Table for Hawaii

	Agriculture	Mining and Construction	Manufacturing	Transportation and Utilities	Trade	Finance Insurance & Real estate	Services	Government	Personal Consumption Expenditures
Agriculture	0.0909	0.0005	0.0776	0.0000	0.0031	0.0103	0.0026	0.0000	0.0038
Mining and Construction	0.0025	0.0068	0.0032	0.0053	0.0016	0.0237	0.0057	0.0011	0.0000
Manufacturing	0.0732	0.0626	0.0535	0.1228	0.0344	0.0120	0.0277	0.0029	0.0379
Transportation and Utilities	0.0239	0.0360	0.0240	0.1046	0.0374	0.0314	0.0379	0.0210	0.0459
Trade	0.0269	0.0499	0.0292	0.0168	0.0202	0.0078	0.0219	0.0023	0.1481
Finance, Insurance, and Real Estate	0.0221	0.0058	0.0103	0.0249	0.0296	0.1415	0.0508	0.0087	0.2367
Services	0.0107	0.0497	0.0265	0.0302	0.0626	0.0477	0.0667	0.0137	0.2218
Government	0.0060	0.0008	0.0131	0.0111	0.0175	0.0049	0.0219	0.0000	0.0102
Labor Income	0.4065	0.4797	0.2052	0.3234	0.4292	0.2217	0.5027	0.7285	0.0000
Other Value Added	0.1946	0.0775	0.1058	0.2055	0.2503	0.4367	0.1272	0.2084	0.0000
Total Imports	0.1426	0.2308	0.4515	0.1554	0.1140	0.0623	0.1349	0.0136	0.2137
Total Industry Purchases	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9181

Table 2.3. 1992 Aggregated Total Requirements Table for Hawaii (Type I)

	Agriculture	Mining and Construction	Manufacturing	Transportation and Utilities	Trade	Finance Insurance & Real estate	Services	Government
Agriculture	1.1085	0.0078	0.0919	0.0135	0.0082	0.0158	0.0075	0.0008
Mining and Construction	0.0043	1.0082	0.0046	0.0078	0.0036	0.0287	0.0083	0.0016
Manufacturing	0.0930	0.0776	1.0713	0.1505	0.0474	0.0265	0.0414	0.0072
Transportation and Utilities	0.0360	0.0484	0.0355	1.1263	0.0496	0.0469	0.0515	0.0250
Trade	0.0348	0.0562	0.0363	0.0259	1.0253	0.0143	0.0274	0.0035
Finance, Insurance, and Real Estate	0.0333	0.0150	0.0199	0.0386	0.0422	1.1715	0.0674	0.0120
Services	0.0209	0.0621	0.0365	0.0452	0.0745	0.0649	1.0804	0.0166
Government	0.0095	0.0048	0.0166	0.0162	0.0210	0.0084	0.0257	1.0009
Output Multiplier	1.3403	1.2800	1.3126	1.4240	1.2718	1.3771	1.3096	1.0677

In matrix notation, the above system of equations can be written as:

$$\begin{bmatrix} X_1 \\ X_2 \\ \cdot \\ \cdot \\ \cdot \\ X_8 \end{bmatrix} = \begin{bmatrix} a_{11} & a_{12} & \cdot & \cdot & \cdot & a_{18} \\ a_{21} & a_{22} & \cdot & \cdot & \cdot & a_{28} \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ a_{81} & a_{82} & \cdot & \cdot & \cdot & a_{88} \end{bmatrix} \begin{bmatrix} X_1 \\ X_2 \\ \cdot \\ \cdot \\ \cdot \\ X_8 \end{bmatrix} + \begin{bmatrix} Y_1 \\ Y_2 \\ \cdot \\ \cdot \\ \cdot \\ Y_8 \end{bmatrix} \quad \text{or} \quad X = AX + Y$$

The matrix of direct coefficients, a_{ij} 's, designated by A, is known as the *technology matrix*. Each column of this matrix represents a production function for the corresponding producing sector.

Total Requirements Table

The direct requirements table (Table 2.2) shows the direct or initial effects on all producing sectors due to a change in final demand. These direct effects lead to a series of successive or indirect impacts on the producing sectors. For example, agriculture supplies about 8 cents worth of agricultural commodities for each dollar increase in manufacturing final demand. Agriculture has to purchase inputs from various suppliers to produce 8 cents of agricultural products required by manufacturing. These suppliers, in turn, would need to purchase inputs to meet the demands for their commodities. The indirect impact would continue through each of the various industries which supply an input to manufacturing, although each successive transaction will be smaller than the preceding one due to the leakage of purchasing power from the economy in the form of imports. To capture all indirect effects of a one dollar increase in manufacturing output, this analysis needs to be applied to each of the manufacturing's input suppliers.

Measuring total requirements this way would be exceedingly tedious, especially when the number of endogenous sectors is large. Fortunately, total requirements can be estimated easily using matrix algebra. The last expression of the inter-industry equations can be written in a more compact form as

$$X = AX + Y$$

where X represents the 8 by 1 vector of industry total output, A represents the 8 by 8 matrix of input coefficients, and Y is the 8 by 1 vector of final demand. This can be generalized to any number of industries. Employing the use of the identity matrix and matrix algebra, the vector of total industry output can be solved as

$$X = (I - A)^{-1} Y$$

where $(I - A)^{-1}$ is the total requirements table, or Leontief inverse matrix.

The total requirements table for the eight-industry input-output model is presented in Table 2.3. Each column of the total requirements table indicates the direct and indirect impacts on *endogenous* sectors (*internal* sectors; in this case within the inter-industry block of the table) of a one dollar increase in the column sector's final demand. For example, a one dollar increase in agriculture's final demand increases output in the economy by about \$1.34 of which \$1.11 comes from agriculture itself and the remaining 23 cents from other endogenous sectors. The column totals of the total requirements table can be broken down into direct and indirect effects of changes in final demands as described below under the derivation of output multipliers.

Input-Output Multipliers

One of the most important functions of input-output analysis is to assess the effects of *exogenous* (*external*) changes on an economy. Various input-output multipliers can be derived from the tables to estimate the effects of a change in an industry's final demand. Three of the most commonly used input-output multipliers are output, income, and employment multipliers.

Multipliers are derived based on direct and indirect effects arising from changes in final demand. The direct effects measure the initial effect attributable to the exogenous change, while the indirect components measure the subsequent intra- and inter-industry purchases of inputs as a result of initial changes in outputs of the directly affected industries. If labor income and personal consumption expenditures (PCE) are also included in the model as industries, multipliers can measure the effects of demand changes on household spending that result from changes in household income through direct and indirect effects. These are known as the induced effects.

Depending upon whether the household sector is included in the model or not, there are two types of multipliers, namely Type I and Type II. They are calculated as follows:

$$\text{Type I multiplier} = \frac{(\text{Direct effect} + \text{Indirect effect})}{\text{Direct effect}}$$

$$\text{Type II multiplier} = \frac{(\text{Direct effect} + \text{Indirect effect} + \text{Induced effect})}{\text{Direct effect}}$$

Thus, Type II multipliers are larger than Type I multipliers. Both Type I and II multipliers are widely employed in real-world applications.

As they are the ratio of total effect to various direct effects, there are many multipliers under each type. The most common ones are the final-demand multipliers and the direct-effect multipliers. Final-demand multipliers measure the changes in variables of interest (output, income, or jobs) for an additional dollar (or million dollar) change in the final demand in an industry. A direct-effect multiplier measures the change in a variable in an economy for an additional unit change of the same variable in an industry.

The calculation of multipliers begins with the transactions table. The direct requirements table, also known as the technical coefficients matrix, is created by dividing each element of the inter-industry transactions table by its corresponding column sum or total of industry inputs (purchases). This direct requirements table is subtracted from an identity matrix and then inverted. The resultant matrix is the total requirements or the Leontief inverse matrix which gives the direct and indirect effects of one dollar change in final demand. The calculation of output, income, and employment multipliers is shown below using an aggregated eight-sector 1992 Hawaii I-O table.

Output Multipliers

The final-demand output multipliers are derived for each sector by summing the corresponding column entries of the total requirements table. The output multipliers for the eight endogenous sectors are shown in the last row of Table 2.3. For example, the output multiplier for agriculture is 1.3403, which means that every dollar change in agriculture's final demand results in a change in the economy's total output by 1.3403 dollars. This includes the initial dollar change in agriculture's final demand (direct effect) and changes in the outputs of the endogenous sectors to support the initial dollar change in agricultural output (indirect effect). Direct and indirect effects of the dollar change in agriculture's final demand are shown in Table 2.4. Similar analyses can be done for other sectors as well. The output multipliers computed based on the total requirements table (Table 2.3) are called Type I output multipliers, as the household sector is not included in the calculations.

Table 2.4. Direct, Indirect, and Total Effects of Type I Output Multiplier for Agriculture

	Direct Effect	Indirect Effect	Total
Agriculture	1.0000	0.1085	1.1085
Mining and Construction	0.0000	0.0043	0.0043
Manufacturing	0.0000	0.0930	0.0930
Transportation and Utilities	0.0000	0.0360	0.0360
Trade	0.0000	0.0348	0.0348
Finance, Insurance, and Real Estate	0.0000	0.0333	0.0333
Services	0.0000	0.0209	0.0209
Government	0.0000	0.0095	0.0095
Total	1.0000	0.3403	1.3403

Income Multipliers

Final-demand income multipliers measure the economic impact of changes in an industry's final demand in terms of changes in the industry's payments (labor income) to households. The Type I income multipliers are derived based on information contained in the direct requirements table (Table 2.2) and total requirements table (Table 2.3). The labor income row of Table 2.2 shows the labor income payments to households for every dollar worth

of output produced by each sector. These are called direct income coefficients which are used to convert the total requirements of Table 2.3 to income equivalents by multiplying each row of the total requirements table by the corresponding sector's direct income coefficient. The column totals of the resultant matrix is the final-demand multiplier which gives the total income effects of a one-dollar change in column sector's final demand. The Type I direct-effect income multiplier is computed by dividing the final-demand income multiplier by the respective direct income coefficient.

Table 2.5 shows the computation of the Type I final-demand income multiplier for agriculture. Based on Table 2.4 and the direct income coefficient row of Table 2.2, direct, indirect, and total output effects of a change in agriculture's final demand are converted to corresponding direct, indirect, and total income effects. For example, the total income effect or coefficient of a one-dollar change in agriculture's final demand is 0.5232 (0.4065 + 0.1167). This is the final-demand income multiplier. The direct-effect income multiplier is derived by calculating the ratio between the final-demand income multiplier and the direct income coefficient. The direct income coefficient for agriculture is 0.4065. Thus, the Type I direct-effect income multiplier for agriculture is 1.287 (0.5232 ÷ 0.4065). Income multipliers for other sectors can be derived likewise.

Table 2.5. Calculation of Income and Employment Multipliers for Agriculture

	Effects in Labor Income			Effects in Employment		
	Income/ output	Direct Effect	Indirect Effect	Employment/ Output (\$M)	Direct Effect	Indirect Effect
Agriculture	0.4065	0.4065	0.0441	27.3951	27.3951	2.9712
Mining and Construction	0.4797	0.0000	0.0021	10.6397	0.0000	0.0456
Manufacturing	0.2052	0.0000	0.0191	5.7438	0.0000	0.5343
Transportation and Utilities	0.3234	0.0000	0.0116	8.9188	0.0000	0.3212
Trade	0.4292	0.0000	0.0149	21.6215	0.0000	0.7528
Finance, Insurance, and Real Estate	0.2217	0.0000	0.0074	7.4835	0.0000	0.2491
Services	0.5027	0.0000	0.0105	21.3805	0.0000	0.4471
Government	0.7285	0.0000	0.0069	25.0625	0.0000	0.2386
Total	-	0.4065	0.1167	-	27.3951	5.5600

Employment Multipliers

Employment multipliers are derived in the same fashion as income multipliers. The only difference is that the direct income coefficients are replaced by the direct employment coefficients (employment to output ratios), obtained by dividing the employment row of Table 2.1 by industry output. The final-demand employment multiplier indicates the number of jobs per additional million dollars of final demand. Computation of the Type I final-demand employment multiplier for agriculture is presented in Table 2.5. For example, the Type I employment multiplier for agriculture is 32.96 (27.3951 + 5.5600). The Type I direct-effect employment multiplier for agriculture is 1.20 (32.96 ÷ 27.3951).

Type II Multipliers

Type II multipliers are derived by adding the labor income row and personal consumption expenditures column to the input-output model, as if the pair represented an additional industry. The conceptual procedures are same as those of Type I multipliers. The total requirements table or Leontief inverse matrix with the household sector is presented in Table 2.6.

The column totals of Table 2.6 are the Type II final-demand output multipliers. The difference between Type I and Type II multipliers is called the induced effect. Using the total requirements table with the household sector (Table 2.6), Type II income and employment multipliers can be computed in the same manner as Type I income and employment multipliers. The entries in the labor income row in Table 2.6 are the final-demand income multiplier. Thus, Type II direct-effect income multipliers can simply be calculated as the ratios of elements in labor income rows between Tables 2.6 and 2.2. Due to induced effects, Type II input-output multipliers are higher than Type I multipliers. For comparison purposes, Type I and Type II output, income, and employment multipliers are presented in Table 2.7.

Table 2.6. 1992 Aggregated Total Requirements Table for Hawaii (Type II)

Industry	Mining and			Transportation		Finance		Personal	
	Agriculture	Construction	Manufacturing	and Utilities	Trade	Real estate	Services	Government	Consumption Expenditures
Agriculture	1.1203	0.0209	0.0992	0.0239	0.0203	0.0236	0.0216	0.0179	0.0227
Mining and Construction	0.0120	1.0167	0.0093	0.0146	0.0115	0.0338	0.0175	0.0127	0.0148
Manufacturing	0.1490	0.1397	1.1057	0.1996	0.1044	0.0635	0.1077	0.0877	0.1069
Transportation and Utilities	0.1022	0.1218	0.0762	1.1843	0.1170	0.0907	0.1300	0.1202	0.1265
Trade	0.1651	0.2008	0.1163	0.1401	1.1580	0.1004	0.1821	0.1909	0.2491
Finance, Insurance, and Real Estate	0.2726	0.2805	0.1669	0.2483	0.2860	1.3295	0.3513	0.3561	0.4574
Services	0.2351	0.2998	0.1681	0.2329	0.2927	0.2064	1.3346	0.3246	0.4094
Government	0.0273	0.0245	0.0275	0.0318	0.0392	0.0201	0.0468	1.0264	0.0340
Labor Income	0.7942	0.8813	0.4878	0.6961	0.8091	0.5244	0.9424	1.1420	1.5181
Output Multiplier	2.0837	2.1048	1.7691	2.0754	2.0290	1.8679	2.1916	2.1365	1.4208

Table 2.7. 1992 Aggregated Type I and Type II Output, Income, and Employment Multipliers for Hawaii

Industry	Final-demand multipliers				Direct-effect multipliers			
	Output Multipliers ¹		Income Multipliers ²		Employment Multipliers ³		Income Multipliers ⁴	
	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II
Agriculture	1.340	2.084	0.523	0.794	32.955	43.908	1.287	1.954
Mining and Construction	1.280	2.105	0.581	0.881	14.593	26.746	1.210	1.837
Manufacturing	1.313	1.769	0.321	0.488	11.166	17.893	1.566	2.377
Transportation and Utilities	1.424	2.075	0.459	0.696	13.584	23.183	1.418	2.153
Trade	1.272	2.029	0.533	0.809	25.582	36.740	1.242	1.885
Finance, Insurance, and Real Estate	1.377	1.868	0.345	0.524	11.983	19.215	1.558	2.365
Services	1.310	2.192	0.621	0.942	25.833	38.828	1.235	1.874
Government	1.068	2.137	0.752	1.142	25.910	41.659	1.033	1.568

¹The final-demand output multiplier of an industry represents the total dollar change in output that occurs in all industries, for each additional dollar change in final demand of the industry.

²The final-demand income multiplier of an industry represents the total dollar change in earnings (wages, salaries, proprietor's income, and other labor income) of households employed by all industries, for each additional dollar change in final demand of the industry.

³The final-demand employment multiplier of an industry represents the total change in number of jobs in all industries, for each additional 1 million dollar change in final demand of the industry.

⁴The direct-effect income multiplier of an industry represents the total dollar change in earnings (wages, salaries, proprietor's income, and other labor income) of households employed by all industries, for each additional dollar change in earnings of households employed by the industry.

⁵The direct-effect employment multiplier of an industry represents the total change in number of jobs in all industries, for each additional job in the industry.

3. INDUSTRY CLASSIFICATION, DATA SOURCES AND ESTIMATION PROCEDURES

INDUSTRY DESCRIPTION FOR THE 1992 HAWAII INPUT-OUTPUT TABLE

There are 118 industry sectors in the 1992 Hawaii I-O table. These include 18 agricultural and fishing industries, 8 mining and construction industries, 24 manufacturing industries, 12 transportation, communication, and utilities industries, 9 trade industries, 5 finance, insurance, and real estate industries, 37 service industries, and 5 government sectors. A detailed list of the industries is presented in Appendix Table C.

The industry selection for the 1992 Hawaii I-O table was based on previous input-output studies, the 1992 IMPLAN I-O table for Hawaii², and the 1987 U.S. I-O table from the Bureau of Economic Analysis (BEA). The size of output and number of jobs in each industry were also considered in selecting the 1992 industry categories. Some small but growing industries and those industries specific to Hawaii were also included. Input-output sectors for the 1992 table can be easily aggregated into the 60 industries used in the 1987 table for comparison purposes, since one of the purposes of input-output analysis is to examine how the Hawaii economy changes over time. The comparison between the 1987 and 1992 input-output categories is presented in Appendix Table B.

Besides 118 industry sectors, the 1992 I-O table also includes 7 final demand sectors (personal consumption expenditures [PCE], state and local government, federal government: defense, federal government: civilian, private investment, visitor expenditures, and exports) and 3 final payments sectors (labor income, other value added, and imports).

DATA SOURCES AND ESTIMATION METHODOLOGY

It would be ideal to construct the I-O table based on primary data collected directly from an economic census of firms and households, as in the U.S. Benchmark Study of Input-Output Accounts. Given the high cost and amount of time involved in collecting primary data, state and local level input-output studies are commonly based on data collected from secondary and other primary sources. For similar reasons, the 1992 Hawaii I-O table is based mainly on secondary data.

The I-O table presented in this report is constructed for the State of Hawaii for the year 1992. The 1992 I-O table coincides with the most recent Census of Industries. As

² The IMPLAN model (IMpact analysis for PLANning) was originally developed by the USDA Forest Service in cooperation with the Federal Emergency Management Agency and the USDI Bureau of Land Management to assist the Forest Service in land and resource management planning. It uses the U.S. national I-O table as a base with built-in procedures for updating the national table into a regional table. The IMPLAN model contains 528 sectors.

discussed below, the output for several 1992 Hawaii industry sectors was derived from the 1992 Census of Industries for Hawaii.

The data required for the 1992 Hawaii I-O table can be divided into five main components:

- Output
- Value added
- Final demands
- Employment
- Inter-industry transactions

Industry outputs came primarily from three sources, namely the 1992 Statistics of Hawaiian Agriculture, 1992 Census of Hawaii Industries, and 1992 Department of Taxation business receipts summary³. Value added was estimated based on 1992 Hawaii Gross State Product (GSP) by industry from BEA. The 1992 employment figures were estimated from ES202 jobs tabulated at a 4-digit SIC level by the Hawaii State Department of Labor and Industrial Relations, BEA wage and salary jobs, and BEA total jobs. The data sources and estimation procedures for each data component are described below and the estimation of inter-industry transactions is described in Section 4.

Output

Agriculture and Fishing (Industry # 1 to 18)

Except for aquaculture, commercial fishing, forestry products, agricultural services, and landscape design and care, the output for each agricultural sector was the value of crop and livestock sales obtained from the 1992 Statistics of Hawaiian Agriculture. Output for aquaculture, commercial fishing, and landscape design and yard care services was obtained from the 1992 Hawaii Tax Department data. Forestry output was taken from the 1992 IMPLAN input-output data for Hawaii. The output of agricultural, forestry, and fishing services was estimated based on the ratio of output to wage and salary jobs for business services in the 1987 Hawaii I-O table applied to the 1992 wage and salary jobs for agricultural, forestry, and fishing services. In the 1987 Hawaii I-O table, agricultural, forestry, and fishing services sector was classified under business services.

Mining and Construction (Industry # 19 to 26)

The output for mining was obtained from the 1992 Census of Mineral Industries for Hawaii. Similarly, output for all construction industries was the net value of construction

³ As a result of the devastation caused by Hurricane Iniki in 1992, business receipts for Kauai County were excluded from 1992 Tax Department business receipts summary prepared for the 1992 Hawaii input-output study. Following a Tax Department guideline, outputs from Tax Department data were adjusted based on Kauai County's share of 1.4% of statewide business receipts in 1989.

taken from the 1992 Census of Construction Industries. The category “Other business receipts of construction industries” was also included in the construction output.

Manufacturing (Industry # 27 to 50)

Except for pineapple processing, sugar processing, printing and publishing, petroleum products, rubber and plastics, primary metals, and machinery and appliances, output for all manufacturing industries was obtained or estimated from the 1992 Census of Manufactures for Hawaii. The 1992 output for sugar processing, pineapple processing, and petroleum products was taken from the *State of Hawaii Data Book 1995*. Because of disclosure problems, output of several food processing sectors was estimated based on ES202 wages and salaries employment. For example, the census output for meat products was adjusted to include the output of poultry processing which is not reported separately in the Census. The output for poultry processing was estimated based on census output for meat packing plants, and sausages and other prepared meats and the wage and salary jobs ratios among meat packing plants, sausages and other prepared meats, and poultry processing. The output for printing and publishing was obtained from Tax Department data as the census output for this industry was too small relative to its value added from BEA. Output for rubber and plastics was estimated based on the 1987 Hawaii output-to-value-added ratio applied to 1992 value added for this industry. Similarly, the output for primary metals was estimated based on the output-to-value-added ratio for fabricated metal products and value added for primary metals. Likewise, the output of machinery and appliances was estimated based on the 1987 Hawaii output-to-value-added ratio and 1992 value added for this industry.

Transportation, Communications, and Utilities (Industry # 51 to 62)

Except for transportation services, the output for transportation, communication, and utilities was obtained from sources other than Census, as the census output for these industries was not disclosed or too small compared to their value added. The output of motor freight transportation and warehousing, air transportation, water transportation, and all communication industries was obtained from Tax Department data. The output of taxis, limousines, and buses was estimated based on the 1987 Hawaii output-to-value-added ratio applied to 1992 value added for this industry. The 1992 outputs for electricity and gas were obtained from the *State of Hawaii Data Book 1995*.

Wholesale and Retail Trade (Industry # 63 to 71)

The output for wholesale trade was estimated based on the 1992 Census of Wholesale Trade for Hawaii and an estimated 20.3 % wholesale margin based on the 1987 Hawaii I-O table and 1987 Census of Wholesale Trade for Hawaii. Except for eating and drinking, all retail output was derived based on the 1992 Census of Retail Trade for Hawaii and an estimated 36.8 % retail margin based on the 1987 Hawaii I-O table and 1987 Census of Retail Trade for Hawaii. The output for eating and drinking was estimated based on intermediate and final demands for eating and drinking.

Finance, Insurance, and Real Estate (Industry # 72 to 76)

Output for finance and insurance industries was estimated using the output-to-value-added ratio for finance and insurance industries in the 1987 U.S. I-O table applied to 1992 Hawaii value added for these industries. The output for real estate was obtained from 1992 Tax Department data, and output for owner-occupied dwellings was estimated from the 1992 Hawaii GSP Accounts.

Service Industries (Industry # 77 to 113)

Except for business services, educational services, motion pictures and video rental, and the household industry, output for all service industries was estimated from the 1992 Census of Service Industries for Hawaii. Because the census output for each business service was small relative to value added, the output for business services was estimated by distributing the total output for business services from Tax Department data to individual business services based on their respective census output shares. For the same reason, the output for educational services was estimated based on 1987 Hawaii output-to-value-added ratio applied to the 1992 value added for educational services. Similarly, output of motion pictures and video rental was derived based on the output-to-value-added ratio for theatrical producers and musicians applied to the value added for motion pictures and video rentals. The output for household-industry, classified under miscellaneous personal services, was estimated based on IMPLAN output-to-value-added ratio applied Hawaii value added for household industry for 1992. The census output of membership organizations was also adjusted upwards to include the output for labor and religious organizations.

State and Local Government Enterprises (Industry # 114)

The output of state and local government enterprises was collected from various State and County Financial Reports. Following the BEA's definition in the 1987 U.S. I-O table, state and local government enterprises consist of harbors, airports, government housing, water supply, and public transit systems.

Federal Government Enterprises (Industry # 115)

The output for federal government enterprises primarily consists of the output of the U.S. Postal Services and was obtained from the 1995 Hawaii State Data Book.

General Government Sectors (Industry # 116 to 118)

General government sectors include federal defense, federal non-defense, and state and local government units. Output for the general government sectors is obtained from Hawaii GSP for government sectors.

Value Added

Value added is defined as total industry output less the cost of inter-industry purchases of goods and services less industry's gross imports. Value added includes labor income and other value added which consists of rents, royalties, dividends received by individuals, corporate profits earned by corporations, indirect business taxes, and capital consumption allowances.

The 1992 Bureau of Economic Analysis (BEA) estimates of Hawaii GSP by industry formed the basis for estimating value added for the 1992 Hawaii I-O table. BEA publishes GSP by industry at the state level with a three year lag. The latest data from BEA was released in early June 1997 and cover the years from 1977 to 1994. These estimates are available at the two-digit level of Standard Industry Classification (SIC). Industries in the 1992 I-O table are classified in greater detail than the two-digit SIC classification used in BEA GSP estimates. Therefore, in several cases, BEA figures were allocated into the 1992 Hawaii industry categories based on output shares. BEA GSP measures were then adjusted based on output to value added ratios in the 1987 U.S. I-O table, the 1987 Hawaii I-O table, and the 1992 IMPLAN I-O tables then applied to the 1992 Hawaii labor income to value added ratios to make them consistent with 1992 Hawaii Income and Expenditures Account as discussed below. Table 3.1 presents the difference between BEA's GSP by industry and the GSP estimated for the 1992 Hawaii I-O table.

Table 3. 1. Value Added in Input-Output Account and BEA Estimates, 1992 (\$ million)

Industry	Input-Output Account	BEA Estimates
Agriculture, forestry, and fishing	500.0	500.0
Mining and construction	2,140.5	2,181.0
Manufacturing	1,228.1	1,244.0
Transportation, communication, and utilities	2,737.2	3,084.0
Wholesale and retail trade	5,059.0	5,140.0
Finance, insurance, and real estate	5,234.5	8,190.0
Services	7,010.0	7,112.0
Government and government enterprises	6,652.4	7,536.0
Total Gross State Product	30,561.7	34,987.0

DBEDT does not estimate value added by industry on an annual basis and at detailed industry levels. Comparing BEA's total GSP for Hawaii and total GSP in DBEDT's Hawaii Income and Expenditure Account, BEA's estimate is over \$4 billion higher than that of DBEDT in 1992. DBEDT's GSP estimate is more consistent with the estimated output for the 1992 Hawaii I-O model. The overall output-to-total GSP ratio for Hawaii is about 1.55 in 1992 against the national ratio of 1.78 in the 1987 BEA U.S. I-O table.

From the I-O table, the following relationship must hold:

Total output = Total intermediate input (including imports) + Total value added

If value added is too high, then intermediate input would be too low. The 1992 Hawaii ratio of total intermediate input (including imports) to total output is about 0.40, compared with the national ratio of 0.44 in the 1987 U.S. I-O table.

Labor Income

Labor income is the dominant component of value added. Labor income includes wages and salaries of workers, other labor income (fringe benefits), and payments received by self-employed individuals (proprietors' income). The 1992 estimates of labor income by industry were derived based on 1992 BEA measures of labor income for Hawaii. As for GSP figures, labor income estimates are also available at the two-digit SIC level. The BEA labor income was allocated to the 1992 Hawaii industry categories based on labor income to value added ratios and labor income to output ratios from the 1987 Hawaii and U.S. I-O tables and 1992 IMPLAN I-O table, and the 1992 labor income to employment ratios.

Other Value Added

Other value added consists of rents, royalties, dividends received by individuals, corporate profits earned by corporations, indirect business taxes (excise and sales taxes), and capital consumption allowances. Because of the lack of good estimates of other value added components, other value added was estimated as total value added minus labor income.

Final Demand

Final demand consists of the goods and services purchased by households, businesses, government, and rest of the world for consumption purposes. The final demand sectors in the 1992 I-O table include personal consumption expenditures, gross domestic investment, state and local government expenditures, federal defense expenditures, federal non-defense expenditures, visitor expenditures, and other exports. Final demand less imports equals GSP. Data for the final demand sectors in the Hawaii input-output account depend on the data for GSP in the Hawaii Income and Expenditures Account. DBEDT estimates Hawaii GSP in two ways:

- (1) By summing all the productive income in the state for a given year, including employee compensation, proprietor's income, dividends, rents and interest income, corporate profits, indirect business tax and non-tax payments, and capital consumption allowances. Non-productive income such as transfer payments from government to individuals, while part of personal income; is not included in the GSP measure.

Government transfer payments are government financial assistance or grants, and there are no goods or services provided in exchange.

- (2) By summing all the expenditures in the state for a given year, including personal consumption expenditures, private domestic investment, federal government expenditures, state and local government expenditures, and net exports. The differences between these two measures of GSP are reconciled with the entry in the expenditures table called “discrepancy and omissions.”

The data for the final demand sectors of the 1992 I-O table are taken from the expenditures on GSP in the Hawaii Income and Expenditures Account. The two accounts are basically the same except that the input-output account uses the *Gross Domestic Product* (GDP) concept (consistent with the GDP concept at the national level) while income and expenditures account uses GSP concept (consistent with GNP concept at the national level). GDP measures the value of goods and services produced by Hawaii residents in the state for a given year. GSP measures the value of goods and services produced in the state regardless of residential status. The numerical difference between GDP and GSP is the net value of income from investment which is calculated as follows:

$$\Delta I = I_e - I_m$$

where ΔI = Net value of income from investment

I_e = Income from out-of-state investment by Hawaii residents

I_m = Income payment to non-residents on their assets in Hawaii.

and

$$GDP = GSP - \Delta I$$

Since Hawaii pays more income to out-of-state investors than Hawaii residents earn from out-of-state investment, i.e. $\Delta I < 0$, GDP is higher than GSP. Table 3.2 presents the differences between the two measures.

Table 3.2. Relationship between GSP Account and the Input-Output Account, 1992 (\$millions)

Expenditures on Gross State Product	Input-Output Account	Income and Expenditures Account
Personal consumption expenditures	18,514.8	18,514.8
Gross private domestic investment	4,491.6	4,491.6
Government expenditures	9,585.0	9,585.0
State and local government	5,005.0	5,005.0
Federal defense	3,834.0	3,834.0
Federal civilian	746.0	746.0
Net exports	(2,029.7)	(2,335.0)
Exports	13,077.9	15,228.0
Less: Imports	15,107.6	17,563.0
Discrepancy and omissions	0.0	3.6
Total GSP	30,561.7	30,259.6

Personal Consumption Expenditures

Detailed estimates on personal consumption expenditures (PCE) in the Hawaii Income and Expenditures Account are not available after 1985. The 1992 Hawaii PCE by industry was estimated through four steps as follows:

- (1) Hawaii PCE by 35 commodity categories was estimated based on the 1992 Consumer Expenditure (CE) Survey data for Honolulu, published by the Bureau of Labor Statistics. In estimating the state totals, per capita consumption for Honolulu was calculated first, and then per capita consumption for the neighbor islands was derived by adjusting the Honolulu data using per capita income ratios of the neighbor islands to Honolulu. The total consumption expenditures by island and by commodity were derived by multiplying the island's per capita consumption by its population. State CE by commodity was then calculated as the summation of the four counties for that commodity. To convert CE to PCE, the 1992 national ratios of CE to PCE were used. The CE-to-PCE ratios were obtained from the Bureau of Labor Statistics. According to the comparison made by the Bureau of Labor Statistics between CE and PCE for 1991 and 1994, CE estimates are generally lower than PCE because of the difference in commodity definition and the inclusion of non-profit institutions in PCE. PCE at the national level was estimated by BEA using different methodology from that of CE.
- (2) The state PCE was allocated from 35 CE commodity categories into 107 National Income and Product Account (NIPA) commodity categories. The allocation was based on the PCE shares for 1985 which is the most recent detailed PCE available for Hawaii.
- (3) Because of the differences in industry categories between the PCE in the NIPA and PCE in the input-output account, PCE in NIPA was converted into the national input-output industry categories (i.e., 528 industries) using the U.S. PCE bridge matrix from the BEA's 1987 U.S. I-O table. Because the transactions in the I-O tables are valued at producer prices, the trade and transportation margins were calculated based on the 1987 input-output commodity composition of NIPA personal consumption expenditures and then allocated to appropriate trade and transportation industries.
- (4) PCE was then grouped into 118 industry categories of the 1992 Hawaii I-O table from the 528 industries in the bridge matrix.

Private Domestic Investment

Private domestic investment consists of three sub-categories: change in business inventory, investment in structures, and purchase of producers' durable equipment. Changes in inventories for manufacturing and wholesale industries were taken from the 1992 Census of Manufacturers and Wholesale Trade for Hawaii. For the industries without these data,

the ratio between changes in inventory and output from the 1987 U.S. I-O table were used to estimate the changes in inventory. Investment in structures was taken from the Hawaii Income and Expenditure Account estimated from the Dodge report. Purchase of the producers' durable equipment was estimated based on data from the 1992 Census of Retail and Wholesale Trade. Because most durable products are not produced in Hawaii, the value of producers' durable equipment was treated as import.

State and Local Government Expenditures

State government purchases were estimated based on information specifically tabulated for this study by the State Department of Accounting and General Services (DAGS). County government spending was taken from each county's financial reports. Spending by the state government was tabulated by broad commodity categories. Spending by county government was presented by functions rather than by commodities. The state and local government expenditures were allocated into the 1992 Hawaii input-output industry categories according to the DAGS special tabulation. The state and local government expenditures exclude spending by government enterprises, which is shown in the inter-industry portion of the I-O table. Government purchases of goods and services also exclude government transfer payments.

Federal Defense Expenditures

Federal defense expenditures consist of employee compensation and procurement. Employee compensation includes payments for military personnel and for civilians working on military bases. Employee compensation for federal military personnel was estimated based on BEA's wage and salary data. Compensation for federal civilian workers on the military bases was estimated based on data from Employment and Payrolls published by the State Department of Labor and Industrial Relations (DLIR). Procurement data was taken from the Federal Expenditures by State for Fiscal Years 1991 and 1992, published by the Bureau of the Census. Procurement data was allocated into each industry based on the share of federal defense spending in the 1987 U.S. I-O table.

Federal Non-Defense Expenditures

Similar to federal defense expenditures, federal non-defense expenditures consist of employee compensation and procurement. Employee compensation was estimated based on BEA's wage and salary information for federal civilian government. Procurement data was taken from the Federal Expenditures by State for Fiscal Years 1991 and 1992 published by the Bureau of the Census. Procurement data was allocated to each industry based on the share of federal non-defense spending in the 1987 U.S. I-O table. Federal non-defense expenditures exclude spending by U.S. Postal Services, which is included in the inter-industry portion of the I-O table.

Visitor Expenditures

Visitor expenditures were taken from the 1992 Visitor Expenditure Survey (VES), which is published by the Hawaii Visitors and Convention Bureau (HVCB). To allocate the visitor expenditures into the 1992 input-output industry categories, the following steps were taken:

- (1) Visitor expenditures were allocated from the 20 VES commodity and service categories into the 60 commodity and service categories used in the Hawaii GSP Account. The allocation was based on the share of visitor expenditures in 1985 which was the most recent detailed visitor expenditures survey available for Hawaii.
- (2) Visitor expenditures were allocated from the 60 GSP commodity and service categories into the 528 national input-output industry categories using the PCE bridge matrix from the BEA 1987 U.S. I-O table. After bridging the visitor expenditures between the GSP account and the input-output account, the trade and transportation margins were calculated and the values were allocated to appropriate trade and transportation industries.
- (3) The visitor expenditures were then grouped into the 118 industry categories used in the 1992 Hawaii I-O table.

Other Exports

In contrast to visitor expenditures, where goods and services are sold to non-residents in Hawaii, other exports are goods and services sold to out-of-state businesses or individuals. Examples of such exports are sales of processed sugar to California and an architectural design for a Japanese company in Japan.

Other exports were estimated using two pieces of information, namely water-borne interstate cargo shipments obtained from the U.S. Army Corps of Engineers and foreign exports through Hawaii Customs published by the U.S. Bureau of the Census. The water-borne data was only available in tonnage rather than in dollar value. The 1992 tonnage was converted into dollar value based on 1976 cargo prices and then adjusted to 1992 values using the appropriate producer price indices. DBEDT conducted a survey of cargo prices in 1976, which is the latest source available.

The total value of other exports was then allocated into each industry based on the export-to-output ratios in the 1987 Hawaii I-O table.

Imports

The 1992 Hawaii I-O table does not provide imports by commodity categories. It provides gross imports for intermediate use by producing industries and gross imports by final demand sectors (for example, the total imports value for PCE).

The imports for intermediate use by each industry were derived during the balancing procedure as described in the next section. The imports in the final demand sectors were

derived at each industry level as the residual between output and total sales (final demand + intermediate demand). If the sales exceeds output in an industry, there must be some imports of that industry's product. Estimated imports were evenly allocated among the final demand sectors. However, the table shows only total imports for each final demand sector obtained by summing up imports of all industry products consumed by that sector. For real estate and services, visitors are assumed to consume only Hawaii products.

Employment

Employment data are an important part of the I-O table, as they are used to compute employment multipliers. For the 1992 I-O table, employment is defined in two ways, first, wages and salary employment, and second, total employment which also includes self-employed workers. Employment numbers by industry were estimated based on three sources, ES202 jobs, BEA wage and salary jobs, and BEA total jobs. ES202 jobs only include wage and salary jobs covered by unemployment insurance while BEA wage and salary jobs include both covered and uncovered wage and salary jobs. BEA total jobs include wage and salary jobs as well as self-employed jobs. First, 1992 ES202 jobs were grouped into 118 industry categories. Then, BEA wage and salary jobs at the SIC two-digit level were allocated to 118 industry categories based on ES202 job shares for most industries and based on output shares for construction industries. BEA self-employed jobs were allocated based on BEA wage and salary job shares, labor income, and industry characteristics. For sugarcane, pineapple, sugar processing, and pineapple processing, wage and salary employment figures were obtained from the 1992 DLIR Report on Employment and Payrolls in Hawaii.

4. BALANCING PROCEDURE

The core of an input-output model is the inter-industry transactions table, which shows the flows of commodities and services between industries. Actual data on these commodity and services flows are generally not available. Conducting a full industry survey would be a time consuming and costly proposition. Thus, most input-output models at the regional level employ non-survey or partial-survey methods.

One of the most popular techniques in updating a regional transactions table with non-survey or partial survey data is the RAS procedure, or bi-proportional balancing procedure. The traditional RAS procedure balances the direct requirements table (usually denoted in matrix form as A). This study uses a procedure that balances the inter-industry transactions table (denoted as matrix Z in this study). Both procedures are mathematically equivalent and produce the same results. However, balancing the inter-industry transactions table is faster and takes less time to prepare the data. Consequently, the traditional RAS procedure becomes the RZS procedure in balancing the inter-industry transactions table. The name of the procedure will become self-explanatory in the procedures that follow.

The bi-proportional balancing procedure used in this study estimates the study year inter-industry transactions table using three pieces of information as follows:

- (1) An inter-industry transactions table for an n-sector economy for a given year in the past;
- (2) Total inter-industry sales (intermediate demand) by sector for the study year; and
- (3) Total inter-industry purchases (intermediate input) by sector for the study year.

A hypothetical 3-sector economy is used below to illustrate the bi-proportional balancing procedure. The study year (year 1) inter-industry transactions table to be estimated is denoted as Z(1):

$$Z(1) = \begin{bmatrix} z_{11}(1) & z_{12}(1) & z_{13}(1) \\ z_{21}(1) & z_{22}(1) & z_{23}(1) \\ z_{31}(1) & z_{32}(1) & z_{33}(1) \end{bmatrix}$$

The previous year (year 0) inter-industry transactions table is denoted as Z(0):

$$Z(0) = \begin{bmatrix} z_{11}(0) & z_{12}(0) & z_{13}(0) \\ z_{21}(0) & z_{22}(0) & z_{23}(0) \\ z_{31}(0) & z_{32}(0) & z_{33}(0) \end{bmatrix}$$

The total intermediate demand and total intermediate input for year 1 are denoted by $U(1)$ and $V(1)$, respectively as:

$$U(1) = \begin{bmatrix} U_1(1) \\ U_2(1) \\ U_3(1) \end{bmatrix}, \quad V(1) = [V_1(1) V_2(1) V_3(1)].$$

The balancing procedure will first balance the rows and then the columns of the matrix. To balance the rows, let

$$\begin{aligned} U_1^1 &= z_{11}(0) + z_{12}(0) + z_{13}(0), \\ U_2^1 &= z_{21}(0) + z_{22}(0) + z_{23}(0), \\ U_3^1 &= z_{31}(0) + z_{32}(0) + z_{33}(0). \end{aligned}$$

And let

$$R^1 = \begin{bmatrix} r_1^1 & 0 & 0 \\ 0 & r_2^1 & 0 \\ 0 & 0 & r_3^1 \end{bmatrix}$$

where

$$\begin{aligned} r_1^1 &= \frac{U_1(1)}{U_1^1}, \\ r_2^1 &= \frac{U_2(1)}{U_2^1}, \\ r_3^1 &= \frac{U_3(1)}{U_3^1}. \end{aligned}$$

then $Z^1 = R^1 Z(0)$, where Z^1 is given by

$$Z^1 = \begin{bmatrix} z_{11}(0)r_1^1 & z_{12}(0)r_1^1 & z_{13}(0)r_1^1 \\ z_{21}(0)r_2^1 & z_{22}(0)r_2^1 & z_{23}(0)r_2^1 \\ z_{31}(0)r_3^1 & z_{32}(0)r_3^1 & z_{33}(0)r_3^1 \end{bmatrix} = \begin{bmatrix} z_{11}^1 & z_{12}^1 & z_{13}^1 \\ z_{21}^1 & z_{22}^1 & z_{23}^1 \\ z_{31}^1 & z_{32}^1 & z_{33}^1 \end{bmatrix}$$

This calculation ensures that the rows are balanced, i.e.

$$\sum_{j=1}^n z_{ij}(0)r_i^1 = U_i(1).$$

Here Z^1 and R^1 indicate the first round of balancing.

To balance the columns, let

And let

$$\begin{aligned} V_1^1 &= z_{11}^1 + z_{21}^1 + z_{31}^1, \\ V_2^1 &= z_{12}^1 + z_{22}^1 + z_{32}^1, \\ V_3^1 &= z_{13}^1 + z_{23}^1 + z_{33}^1, \end{aligned}$$

$$S^1 = \begin{bmatrix} s_1^1 & 0 & 0 \\ 0 & s_2^1 & 0 \\ 0 & 0 & s_3^1 \end{bmatrix}$$

where

$$\begin{aligned} s_1^1 &= \frac{V_1(1)}{V_1^1}, \\ s_2^1 &= \frac{V_2(1)}{V_2^1}, \\ s_3^1 &= \frac{V_3(1)}{V_3^1}. \end{aligned}$$

then $Z^2 = Z^1 S^1 = R^1 Z(0) S^1$ and Z^2 can be expressed as

$$Z^2 = \begin{bmatrix} z_{11}^1 s_1^1 & z_{12}^1 s_2^1 & z_{13}^1 s_3^1 \\ z_{21}^1 s_1^1 & z_{22}^1 s_2^1 & z_{23}^1 s_3^1 \\ z_{31}^1 s_1^1 & z_{32}^1 s_2^1 & z_{33}^1 s_3^1 \end{bmatrix} = \begin{bmatrix} z_{11}^2 & z_{12}^2 & z_{13}^2 \\ z_{21}^2 & z_{22}^2 & z_{23}^2 \\ z_{31}^2 & z_{32}^2 & z_{33}^2 \end{bmatrix}$$

This insures that the columns are balanced, i.e.

$$\sum_{i=1}^n z_{ij}^1 s_j^1 = V_j(1).$$

After the *columns* are balanced, the previously balanced *rows* may be somewhat out of balance. Thus the procedure needs to be repeated until both the rows and columns are balanced. This usually requires many iterations using the balancing procedure. The iterative process to obtain the final $Z(1)$ matrix can be expressed as follows:

$$Z(1) = Z^{2n} = [R^n \cdot R^{n-1} \dots R^2 \cdot R^1] \cdot Z(0) \cdot [S^1 \cdot S^2 \dots S^{n-1} \cdot S^n]$$

The above matrix operation process gives the procedure its name (RZS). As described by Richard Stone, developer of the RAS procedure (RZS in this study), the uniform changes across any row and down any column reflect the substitution effects and the fabrication effects, respectively. The substitution effect refers to the emergence of substitutes as production inputs, that is, the substitution of one input for another. The fabrication effect

refers to the altered production of value-added items in a sector's purchases, that is, for example, the substitution of inter-industry inputs for skilled labor.

To construct the 1992 Hawaii inter-industry transactions table, a prior year's inter-industry transactions table $Z(0)$ is needed. The 1992 Hawaii I-O table includes 118 industries. The previous Hawaii I-O tables (both 1982 and 1987) contained only 60 industries. Both the BEA 1987 U.S. and the IMPLAN I-O tables contain 528 industries. No matter which inter-industry transactions table is used to derive the 1992 Hawaii inter-industry transactions table, there is a need for either disaggregating or aggregating the transactions table. The 1992 Hawaii I-O table also includes industries which are unique to Hawaii, such as sugarcane production and processing, and pineapple production and processing. These industries are combined with other industries in the U.S. table.

The initial inter-industry transactions table $Z(0)$ used in estimating the 1992 Hawaii inter-industry transaction table $Z(1)$ was a modified version of the 1987 Hawaii inter-industry transactions table. The 60-industry 1987 transactions table was disaggregated to the 118 industry categories used in the 1992 Hawaii I-O table. The disaggregation was based on information in the BEA 1987 U.S. and IMPLAN 1992 Hawaii inter-industry transactions tables. For example, the 1987 Hawaii I-O table contained personal services as one industry sector, while the 1992 study breaks it down into five separate industries. In the 1987 I-O table, the inter-industry sales from personal services to personal services was \$2.5 million. For the 1992 I-O table, the inter-industry portion of personal services consists of 25 separate cells. Thus, \$2.5 million was broken up into 25 separate cells based on the ratios of those 25 cells in the IMPLAN 1992 Hawaii I-O table.

The 1992 total inter-industry demands by sector were estimated first based on intermediate demand-to-output ratios from the 1987 Hawaii and the IMPLAN 1992 Hawaii I-O tables, and then adjusted by comparing the residual between total industry output and final demand.

Instead of using the total inter-industry purchases (intermediate input) for the column control totals, the difference between an industry's total gross output and value added was used. This calculated control total includes both the industry's total purchases from Hawaii industries and the industry's total imports for intermediate use. For this reason, the 1987 total intermediate import by industry was included as an additional row in the initial inter-industry transaction matrix $Z(0)$. This allowed the estimation of industry imports during the balancing procedure rather than estimating them separately.

The balancing procedure was implemented using specifically designed macros in Microsoft Excel. After obtaining the inter-industry transaction matrix, final demand and final payment sections were added to the matrix to form the complete 1992 Hawaii I-O table. Necessary direct and total requirements tables were then derived to estimate various input-output multipliers.

5. I-O MULTIPLIERS

1992 INPUT-OUTPUT TRANSACTIONS TABLE

The 1992 Hawaii State I-O table contains 118 industries, 7 final demand sectors (personal consumption expenditures, gross domestic investment, state and local government expenditures, federal defense expenditures, federal non-defense expenditures, and other exports), and 4 final payment sectors (value added, labor income, other value added, and imports). Including total intermediate demand and input, total industry output and input, wage and salary jobs, and total jobs, the 1992 Hawaii I-O table contains a total of 126 rows and 128 columns. The complete 1992 Hawaii State I-O table is presented in Appendix Table A. Although not presented in this report, a 60-industry table was also created for comparing multipliers between the 1987 and 1992 I-O tables.

1992 INPUT-OUTPUT MULTIPLIERS

Following the multiplier categories and definitions used by BEA (Bureau of Economic Analysis, U.S. Department of Commerce), 14 types of multipliers were derived for each industry from the 1992 I-O table through mathematical manipulations. They are:

Final-demand multipliers (Type I and Type II)

- Output multiplier
- Income (earnings) multiplier
- Wage and salary employment multiplier
- Total employment multiplier

Direct-effect multipliers (Type I and Type II)

- Income (earnings) multiplier
- Wage and salary employment multiplier
- Total employment multiplier

The final-demand multiplier for output for an industry represents the total change (including the initial change in final demand) in output in the economy for each dollar of final demand change in that industry. The specific measurement is: $\$output/\$final-demand$.

The final-demand multiplier for labor income for an industry indicates the total change in labor income in the economy for each dollar of final demand change in that industry. The specific measurement is: $\$income/\$final\ demand$.

The final-demand multiplier for wage and salary employment for an industry represents the total change in wage and salary jobs (both full-time and part-time) for each dollar change

in the final demand of that industry. The specific measurement is: $\text{Wage and salary jobs}/\$ \text{final demand}$.

The final-demand multiplier for all types of employment for an industry represents the total change in jobs (including wage and salary jobs, self-employed jobs, both full-time and part-time) for each dollar change in the final demand of that industry. The specific measurement is: $\text{jobs}/\$ \text{final demand}$.

The direct-effect multiplier for labor income for an industry indicates the total change (including the initial change) in labor income in the economy for each dollar of labor income change in that industry. The specific measurement is: $\$ \text{labor income}/\$ \text{labor income}$.

The direct-effect multiplier for wage and salary employment for an industry represents the total change (including the initial change) in wage and salary jobs (both full-time and part-time) for each wage and salary jobs change in that industry. The specific measurement is: $\text{Wage and salary jobs}/\text{wage and salary job}$.

The direct-effect multiplier for all types of employment for an industry represents the total change (including the initial change) in jobs (including wage and salary jobs, self-employed jobs, both full-time and part-time) for each job change in that industry. The specific measurement is: jobs/job .

As described in Section 2, if the household sector is assumed to be exogenous to the model, the multipliers derived from the model are Type I multipliers. If the households sector is endogenous, the multipliers derived from the model are Type II multipliers.

Table 5.1 summarizes the 1992 input-output multipliers for Hawaii. Included in the table are both Type I and Type II output, income, wage and salary employment, and total employment multipliers. Type I final-demand multipliers for output range from 1.00 for primary metals, forestry products and general government sectors to 1.88 for sugar processing. Type II final-demand multiplier for output range between 1.09 for petroleum products and 2.70 for sugar processing.

Large output multipliers for sugar processing can be attributed to its high demand for inputs produced by Hawaii industries (i.e., sugarcane). Industries such as petroleum products and primary metals, which are largely dependent on imported inputs, generally have smaller output multipliers.

Output multipliers can increase significantly when households are made endogenous to the model. For example, the output multipliers for general government sectors range from 2.01 to 2.24 compared to Type I output multipliers of 1.00. The differences between Type I and Type II multipliers can be explained by the size of industry's labor income, which is injected into the economy in the form of personal consumption expenditures. In

general, labor intensive industries show the largest increases from Type I to Type II output multipliers.

In terms of total income generated per dollar of final demand, Type I final-demand multipliers for income range from 0.04 for petroleum products to 0.91 for laundry and miscellaneous personal services. The corresponding Type II final-demand multipliers for income range from 0.06 to 1.38 for the same industries. In general, income multipliers ($\$/\text{income}$) will be low for capital intensive industries and high for labor intensive industries.

In terms of *total* income generated per dollar of *direct* income ($\$/\text{income}$), primary metals, forestry products and general government sectors have the lowest and sugar processing has the highest direct-effect multiplier for income (both Type I and Type II). Since it is the ratio between the income multiplier ($\$/\text{final demand}$) and the direct income coefficient ($\$/\text{output ratio}$), the direct-effect income multiplier ($\$/\text{income}$) is generally smaller for industries with large direct income coefficients.

In terms of total jobs per million dollars of final demand (jobs/ $\text{\$million final demand}$), Type I final-demand multipliers for total employment range from 0.68 for petroleum products to 84.17 for miscellaneous personal services (including household industry). The corresponding Type II final-demand multipliers for total employment range from 1.47 to 101.85 for the same industries. Similar to income multipliers, labor intensive industries will experience the largest impact on employment due to changes in an industry's final demand.

If measured in terms of total jobs per each direct job, the Type I direct-effect multipliers for total employment range from 1.00 for primary metals, forestry products and general government sectors to 3.76 for salted and roasted nuts and seeds. The corresponding Type II multipliers vary from 1.20 for miscellaneous livestock to 6.24 for water and sanitary services.

Generally, food manufacturing, transportation services, and utilities have higher, and government, personal services and non-food manufacturing sectors have lower, Type I output multipliers. Likewise, services (except auto and miscellaneous repairs), government, and transportation sectors have higher, and non-food manufacturing, utilities, and communication industries have lower, Type II output multipliers. Among the final-demand multipliers for income ($\$/\text{final demand}$), food manufacturing and utilities sectors have lower, and personal services, professional services, and government sectors have higher, income multipliers for both Type I and Type II. However, for the direct-effect income multipliers ($\$/\text{income}$) the opposite is true. In general, service and trade industries have higher final-demand total employment multipliers (jobs/ $\text{\$million of final demand}$) and lower direct-effect employment multipliers (total jobs/job).

Table 5.1. 1992 Hawaii State Input-Output Multipliers

Industry	Final-Demand Multipliers								Direct-Effect Multipliers							
	Output Multiplier (per \$ final demand)		Income Multiplier (per \$ final demand)		Wage & Salary Employment (per \$ mil. final demand)		Total Employment (per \$ mil. final demand)		Income Multiplier (per \$ income)		Wage & Salary Employment (per job)		Total Employment (per job)			
	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II		
1 Sugar crops	1.33	2.17	0.59	0.90	22.55	31.66	23.71	35.16	1.21	1.83	1.16	1.62	1.09	1.61		
2 Vegetables	1.26	1.86	0.42	0.64	27.37	33.91	49.69	57.94	1.40	2.12	1.20	1.48	1.14	1.33		
3 Tree nuts	1.38	2.10	0.50	0.76	29.65	37.40	52.87	62.64	1.56	2.37	1.30	1.64	1.22	1.45		
4 Pineapple	1.25	1.87	0.43	0.66	18.58	25.27	20.00	28.44	1.32	2.00	1.25	1.71	1.35	1.92		
5 Other fruits	1.33	1.98	0.46	0.70	34.80	41.87	63.09	72.00	1.51	2.29	1.20	1.45	1.15	1.31		
6 Coffee	1.48	2.26	0.55	0.83	29.09	37.52	51.05	61.67	1.68	2.55	1.40	1.81	1.29	1.56		
7 Greenhouse and nursery products	1.35	2.10	0.52	0.79	24.37	32.41	36.24	46.38	1.47	2.23	1.35	1.79	1.32	1.68		
8 Dairy farm products	1.69	2.23	0.38	0.57	21.21	27.02	31.37	38.69	1.66	2.51	1.30	1.65	1.26	1.56		
9 Poultry and eggs	1.53	2.22	0.48	0.73	20.02	27.48	29.30	38.70	1.82	2.76	1.68	2.30	1.61	2.13		
10 Cattle and calves	1.56	2.15	0.41	0.63	24.17	30.55	36.10	44.15	1.55	2.35	1.29	1.63	1.27	1.55		
11 Hogs, pigs, & swine	1.75	2.40	0.45	0.69	12.54	19.53	61.44	70.25	1.74	2.63	1.85	2.88	1.33	1.52		
12 Misc. livestock	1.10	1.53	0.30	0.45	10.62	15.22	37.02	42.83	1.14	1.73	1.11	1.60	1.04	1.20		
13 Aquaculture	1.04	1.49	0.31	0.48	14.11	18.96	24.86	30.96	1.06	1.61	1.04	1.39	1.03	1.28		
14 Commercial fishing	1.38	1.86	0.33	0.50	4.91	10.03	29.51	35.97	1.41	2.13	1.92	3.92	1.10	1.34		
15 Forestry and forest products	1.00	1.23	0.16	0.24	5.48	7.97	13.55	16.68	1.00	1.52	1.00	1.45	1.00	1.23		
16 Other agricultural products	1.52	2.25	0.51	0.78	24.33	32.21	35.90	45.83	1.67	2.53	1.41	1.86	1.36	1.74		
17 Agricultural, forestry, and fishery services	1.16	2.06	0.63	0.95	24.85	34.52	34.75	46.94	1.13	1.71	1.09	1.52	1.10	1.48		
18 Landscape and horticultural services	1.29	2.23	0.67	1.01	23.44	33.70	32.29	45.22	1.20	1.82	1.15	1.66	1.14	1.60		
19 Mining	1.12	1.88	0.53	0.81	9.83	18.05	15.99	26.36	1.08	1.64	1.11	2.04	1.09	1.80		
20 Single family construction	1.27	2.11	0.59	0.90	9.63	18.73	11.99	23.47	1.24	1.88	1.43	2.78	1.45	2.84		
21 Multiple family construction	1.27	2.06	0.56	0.85	7.84	16.48	9.77	20.66	1.24	1.89	1.59	3.34	1.62	3.42		
22 New industrial & commercial buildings	1.28	2.10	0.57	0.87	12.11	20.92	15.12	26.22	1.26	1.92	1.30	2.24	1.32	2.29		
23 Hotel construction	1.29	2.10	0.56	0.86	10.78	19.48	13.44	24.40	1.29	1.95	1.35	2.44	1.37	2.49		
24 Road construction	1.34	2.24	0.63	0.95	12.02	21.69	15.11	27.29	1.30	1.97	1.32	2.39	1.36	2.46		
25 Other construction	1.29	2.13	0.59	0.89	12.00	21.04	15.19	26.59	1.29	1.96	1.32	2.32	1.37	2.39		
26 Maintenance & repairs	1.18	2.18	0.70	1.06	13.90	24.65	17.05	30.59	1.11	1.69	1.16	2.06	1.16	2.09		
27 Pineapple processing	1.79	2.50	0.49	0.75	17.99	25.60	19.31	28.90	2.16	3.28	2.11	3.00	2.26	3.39		
28 Other canned and frozen fruits and vegetables	1.50	1.97	0.33	0.49	10.92	15.93	13.15	19.47	2.18	3.31	2.01	2.93	2.36	3.49		
29 Sugar processing	1.88	2.70	0.57	0.87	21.40	30.25	23.61	34.76	2.79	4.23	2.70	3.82	2.98	4.39		
30 Confectionery products	1.42	1.84	0.30	0.45	10.86	15.43	13.48	19.24	1.99	3.01	1.99	2.83	2.41	3.44		
31 Salted & roasted nuts and seeds	1.51	1.99	0.33	0.51	14.55	19.69	21.00	27.48	2.23	3.39	2.67	3.61	3.76	4.92		
32 Meat products	1.60	2.05	0.31	0.48	13.81	18.65	19.95	26.06	2.20	3.34	2.08	2.81	2.93	3.83		

Table 5.1. 1992 Hawaii State Input-Output Multipliers (cont.)

Industry	Final-Demand Multipliers						Direct-Effect Multipliers							
	Output Multiplier (per \$ final demand)		Income Multiplier (per \$ final demand)		Wage & Salary Jobs (per \$ mil. final demand)		Total Jobs (per \$ mil. final demand)		Income Multiplier (per \$ income)		Wage & Salary Jobs (per job)		Total Jobs (per job)	
	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II
	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II
33 Milk products	1.66	2.16	0.35	0.53	11.50	16.86	14.70	21.46	1.86	2.82	2.76	4.04	3.44	5.02
34 Grain & bakery products	1.44	2.13	0.48	0.73	15.78	23.21	17.50	26.87	1.43	2.17	1.38	2.03	1.49	2.29
35 Beverages	1.50	1.91	0.29	0.44	7.84	12.26	9.11	14.69	2.27	3.44	2.32	3.62	2.62	4.23
36 Other food and tobacco products	1.49	1.93	0.31	0.47	10.13	14.86	13.56	19.53	2.06	3.12	1.86	2.73	2.43	3.50
37 Apparel and textiles	1.21	1.73	0.36	0.55	15.13	20.72	20.29	27.33	1.27	1.92	1.20	1.64	1.20	1.61
38 Lumber and wood products	1.18	1.72	0.38	0.58	9.84	15.72	15.11	22.51	1.18	1.79	1.20	1.91	1.17	1.75
39 Furniture & fixtures	1.21	1.82	0.42	0.64	13.92	20.44	17.69	25.91	1.26	1.91	1.25	1.84	1.27	1.87
40 Paper & allied products	1.13	1.55	0.29	0.44	7.29	11.77	7.58	13.22	1.18	1.78	1.20	1.94	1.24	2.17
41 Printing & publishing	1.37	2.10	0.51	0.78	9.69	17.60	11.66	21.64	1.36	2.07	1.66	3.01	1.74	3.23
42 Chemicals and allied products	1.59	2.21	0.44	0.66	12.66	19.37	14.06	22.52	1.76	2.66	1.70	2.60	1.81	2.89
43 Petroleum refining & products	1.03	1.09	0.04	0.06	0.60	1.23	0.68	1.47	1.28	1.93	1.56	3.18	1.70	3.67
44 Rubber & plastic products	1.22	1.63	0.29	0.43	11.22	15.61	11.77	17.30	1.32	2.00	1.21	1.69	1.25	1.84
45 Stone, clay, glass, & concrete products	1.21	2.05	0.59	0.89	7.55	16.63	9.85	21.30	1.17	1.77	1.34	2.95	1.34	2.91
46 Primary metals	1.00	1.66	0.46	0.70	10.00	17.11	13.46	22.42	1.00	1.52	1.00	1.71	1.00	1.67
47 Fabricated metal products	1.17	1.64	0.33	0.50	7.97	13.03	9.77	16.14	1.24	1.89	1.26	2.05	1.27	2.09
48 Machinery and appliances	1.25	1.76	0.36	0.54	8.85	14.37	10.51	17.46	1.32	2.00	1.34	2.17	1.36	2.26
49 Transportation equipment	1.13	1.74	0.42	0.64	9.72	16.23	10.20	18.41	1.13	1.71	1.14	1.91	1.18	2.13
50 Misc. manufacturing products	1.14	1.72	0.41	0.62	14.19	20.44	22.16	30.03	1.16	1.76	1.13	1.63	1.11	1.50
51 Taxies, limousines, & buses	1.39	2.14	0.53	0.80	18.86	27.00	25.54	35.80	1.29	1.96	1.22	1.74	1.21	1.69
52 Motor freight transport and warehousing	1.57	2.34	0.54	0.82	16.52	24.85	18.96	29.46	1.54	2.33	1.54	2.32	1.60	2.49
53 Water transportation	1.68	2.27	0.41	0.62	10.08	16.41	11.54	19.53	1.91	2.90	1.96	3.19	2.16	3.65
54 Air transportation	1.41	2.09	0.47	0.72	12.07	19.35	12.55	21.74	1.17	1.78	1.18	1.90	1.22	2.12
55 Transportation services	1.41	2.26	0.60	0.90	18.90	28.08	23.02	34.59	1.36	2.06	1.29	1.91	1.33	1.99
56 Telephone, beeper, & cellular	1.12	1.64	0.37	0.56	7.68	13.31	8.06	15.17	1.12	1.70	1.14	1.98	1.18	2.22
57 Cable TV	1.14	1.68	0.38	0.57	8.13	13.95	8.45	15.79	1.15	1.75	1.21	2.08	1.24	2.32
58 Radio and TV broadcasting	1.81	2.62	0.57	0.87	12.61	21.47	13.04	24.21	1.82	2.76	1.88	3.20	1.91	3.55
59 Other communications	1.17	1.71	0.38	0.58	7.83	13.71	7.99	15.41	1.17	1.77	1.17	2.04	1.17	2.26
60 Electricity	1.26	1.61	0.24	0.37	4.24	7.96	4.44	9.14	1.14	1.74	1.19	2.24	1.23	2.53
61 Gas production & distribution	1.52	1.73	0.14	0.22	2.24	4.45	2.55	5.34	1.67	2.53	2.25	4.48	2.51	5.26
62 Water and sanitary services	1.74	2.38	0.45	0.69	9.92	16.88	11.61	20.38	2.39	3.62	3.09	5.26	3.55	6.24
63 Wholesale trade	1.36	2.16	0.56	0.85	16.65	25.32	20.44	31.37	1.36	2.06	1.39	2.11	1.44	2.21
64 Eating and drinking	1.20	1.79	0.42	0.63	24.83	31.25	26.20	34.29	1.20	1.81	1.09	1.37	1.12	1.47
65 Building materials & gardening	1.56	2.35	0.55	0.84	18.01	26.53	21.22	31.97	1.55	2.34	1.36	2.00	1.44	2.16
66 General merchandise stores	1.57	2.38	0.57	0.86	25.84	34.57	28.29	39.31	1.62	2.45	1.27	1.70	1.37	1.90

Table 5.1. 1992 Hawaii State Input-Output Multipliers (cont.)

Industry	Final-Demand Multipliers						Direct-Effect Multipliers							
	Output Multiplier (per \$ final demand)		Income Multiplier (per \$ final demand)		Wage & Salary Jobs (per \$ mil. final demand)		Total Jobs (per \$ mil. final demand)		Income Multiplier (per \$ income)		Wage & Salary Jobs (per job)		Total Jobs (per job)	
	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II
67 Food stores	1.13	1.99	0.60	0.92	29.61	38.93	31.55	43.29	1.09	1.65	1.04	1.37	1.06	1.45
68 Automotive dealers & service stations	1.04	1.92	0.62	0.93	22.24	31.73	23.17	35.13	1.03	1.56	1.02	1.45	1.02	1.55
69 Apparel & accessory stores	1.51	2.31	0.56	0.84	26.00	34.56	29.81	40.61	1.50	2.28	1.22	1.62	1.27	1.73
70 Furniture and home furnishings stores	1.38	2.19	0.57	0.86	20.80	29.57	23.76	34.81	1.30	1.97	1.18	1.68	1.22	1.79
71 Misc. retail	1.10	1.95	0.60	0.91	16.75	25.99	29.64	41.29	1.06	1.61	1.05	1.63	1.04	1.45
72 Banking and credit agencies	1.49	2.13	0.45	0.68	11.39	18.31	16.75	25.47	1.68	2.55	1.63	2.63	1.61	2.44
73 Security and commodity brokers	1.41	2.32	0.64	0.96	9.58	19.38	14.03	26.38	1.35	2.04	1.58	3.19	1.51	2.83
74 Insurance and insurance agencies	1.61	2.44	0.58	0.88	14.22	23.18	19.07	30.36	1.62	2.45	1.62	2.64	1.63	2.60
75 Owner-occupied dwellings ¹	1.56	1.89	0.24	0.36	5.86	9.48	8.22	12.78	NA	NA	NA	NA	NA	NA
76 Real estate	1.21	1.65	0.31	0.46	5.64	10.35	9.79	15.72	2.75	4.18	1.49	2.74	1.36	2.19
77 Hotels and lodging places	1.43	2.09	0.46	0.70	23.53	30.59	25.57	34.47	0.89	1.36	1.23	1.60	1.32	1.78
78 Laundry, cleaning, and shoe repairs	1.02	2.31	0.91	1.38	29.87	43.84	60.51	78.12	1.01	1.53	1.01	1.48	1.00	1.30
79 Portrait photography	1.19	2.20	0.70	1.07	26.27	37.09	52.16	65.81	1.11	1.68	1.08	1.53	1.06	1.33
80 Beauty and barber shops	1.01	2.20	0.84	1.27	31.77	44.69	64.42	80.71	1.00	1.52	1.00	1.41	1.00	1.26
81 Funeral services and crematories	1.05	2.00	0.67	1.01	23.84	34.10	48.04	60.98	1.03	1.56	1.02	1.46	1.01	1.29
82 Misc. personal services	1.04	2.33	0.91	1.38	67.79	81.81	84.17	101.85	1.02	1.54	1.01	1.21	1.01	1.22
83 Advertising	1.45	2.53	0.76	1.15	13.32	24.96	20.04	34.71	1.23	1.87	1.31	2.45	1.20	2.07
84 Photofinishing and commercial photography	1.40	2.16	0.53	0.80	17.75	25.89	28.36	38.63	1.42	2.15	1.33	1.94	1.29	1.75
85 Services to buildings	1.22	2.30	0.76	1.15	25.37	37.03	41.21	55.91	1.15	1.75	1.13	1.65	1.12	1.51
86 Equipment rental & leasing	1.24	1.99	0.52	0.79	10.09	18.13	16.07	26.20	1.22	1.85	1.33	2.38	1.28	2.09
87 Employment services	1.13	2.41	0.89	1.36	28.79	42.57	47.15	64.53	1.06	1.62	1.04	1.54	1.04	1.42
88 Computer and data processing services	1.20	2.10	0.63	0.96	11.05	20.82	17.60	29.91	1.13	1.72	1.24	2.34	1.20	2.04
89 Security services	1.13	2.38	0.87	1.33	30.13	43.59	49.45	66.43	1.10	1.67	1.10	1.59	1.09	1.47
90 Other business services	1.27	2.08	0.56	0.86	16.56	25.25	26.37	37.34	1.22	1.85	1.20	1.83	1.16	1.65
91 Auto rental & leasing	1.32	1.90	0.41	0.62	11.43	17.72	13.30	21.22	1.34	2.03	1.35	2.09	1.41	2.24
92 Auto repairs and services	1.28	1.83	0.38	0.58	17.62	23.52	23.63	31.07	1.45	2.19	1.26	1.68	1.25	1.65
93 Electric repair services	1.10	1.95	0.59	0.90	13.79	22.92	23.90	35.42	1.07	1.62	1.07	1.78	1.06	1.56
94 Misc. repair services	1.22	2.12	0.63	0.96	14.56	24.27	24.73	36.97	1.14	1.73	1.16	1.93	1.11	1.67
95 Motion pictures and video rental	1.23	2.15	0.64	0.98	33.22	43.14	40.24	52.74	1.20	1.82	1.17	1.52	1.17	1.54
96 Theatrical services	1.27	2.29	0.72	1.09	21.60	32.64	32.18	46.10	1.21	1.83	1.17	1.76	1.17	1.67
97 Misc. amusement services	1.36	2.25	0.63	0.95	22.85	32.51	34.09	46.26	1.34	2.03	1.25	1.78	1.25	1.70
98 Membership sports and recreation	1.16	2.20	0.73	1.11	53.19	64.44	79.25	93.44	1.10	1.67	1.03	1.25	1.03	1.21
99 Museums, zoos, and botanical gardens	1.37	2.32	0.67	1.01	30.72	41.00	32.26	45.22	1.28	1.95	1.16	1.54	1.21	1.70

Table 5.1. 1992 Hawaii State Input-Output Multipliers (cont.)

Industry	Final-Demand Multipliers						Direct-Effect Multipliers							
	Output Multiplier (per \$ final demand)		Income Multiplier (per \$ final demand)		Wage & Salary Jobs (per \$ mil. final demand)		Total Jobs (per \$ mil. final demand)		Income Multiplier (per \$ income)		Wage & Salary Jobs (per job)		Total Jobs (per job)	
	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II	Type I	Type II
100 Doctors and dentists	1.22	2.26	0.73	1.10	14.12	25.32	16.92	31.04	1.12	1.71	1.17	2.09	1.19	2.19
101 Nursing and protective care	1.37	2.34	0.68	1.04	21.80	32.35	30.19	43.49	1.23	1.87	1.19	1.77	1.18	1.70
102 Hospitals	1.41	2.25	0.59	0.89	14.17	23.20	15.51	26.91	1.31	1.98	1.35	2.21	1.47	2.56
103 Other medical and health services	1.29	2.15	0.60	0.91	21.06	30.30	26.69	38.35	1.21	1.84	1.16	1.67	1.17	1.68
104 Legal services	1.19	2.40	0.85	1.30	12.79	25.96	16.25	32.85	1.10	1.67	1.23	2.50	1.27	2.57
105 Educational services	1.07	2.01	0.67	1.01	28.98	39.24	41.29	54.21	1.04	1.58	1.03	1.39	1.03	1.35
106 Child day care services	1.11	2.26	0.81	1.22	72.77	85.18	73.09	88.74	1.05	1.60	1.02	1.19	1.02	1.24
107 Residential care	1.23	2.43	0.84	1.28	20.77	33.74	21.20	37.54	1.10	1.67	1.08	1.75	1.10	1.94
108 Membership organizations	1.53	2.45	0.64	0.97	25.23	35.12	26.68	39.16	1.40	2.13	1.23	1.72	1.31	1.92
109 Engineering and architectural services	1.27	2.24	0.68	1.03	12.15	22.62	19.24	32.43	1.21	1.83	1.32	2.46	1.30	2.19
110 Accounting, auditing , and bookkeeping	1.26	2.19	0.66	1.00	15.15	25.25	23.93	36.67	1.21	1.83	1.23	2.05	1.21	1.85
111 Management and consulting services	1.34	2.25	0.64	0.97	16.79	26.65	26.08	38.51	1.28	1.95	1.31	2.08	1.26	1.87
112 Research, development and testing	1.15	2.33	0.82	1.25	24.80	37.49	38.95	54.95	1.11	1.69	1.14	1.72	1.11	1.57
113 Other services	1.20	2.37	0.82	1.25	35.67	48.35	45.48	61.46	1.11	1.68	1.07	1.45	1.08	1.46
114 State and local govt. enterprises	1.64	2.35	0.50	0.76	13.26	20.94	15.33	25.01	1.79	2.72	1.65	2.60	1.90	3.11
115 Fed govt. enterprises	1.27	2.39	0.78	1.19	20.30	32.38	21.31	36.55	1.15	1.75	1.18	1.89	1.24	2.13
116 Federal govt.: Military	1.00	2.01	0.71	1.07	25.97	36.85	25.97	39.68	1.00	1.52	1.00	1.42	1.00	1.53
117 Federal govt.: Nonmilitary	1.00	2.13	0.79	1.20	25.06	37.23	25.06	40.41	1.00	1.52	1.00	1.49	1.00	1.61
118 State and local government	1.00	2.24	0.87	1.32	29.00	42.37	29.00	45.86	1.00	1.52	1.00	1.46	1.00	1.58
Maximum	1.88	2.70	0.91	1.38	72.77	85.18	84.17	101.85	2.79	4.23	3.09	5.26	3.76	6.24
Minimum	1.00	1.09	0.04	0.06	0.60	1.23	0.68	1.47	0.89	1.36	1.00	1.19	1.00	1.20
Average	1.31	2.08	0.54	0.81	18.09	26.36	25.33	35.76	1.37	2.08	1.36	2.12	1.41	2.16

Note: ¹Direct-effect income multiplier, direct-effect wage and salary employment multiplier, and direct-effect total employment multiplier for owner-occupied dwellings are not defined because direct income and employment coefficients for this industry are zero.

6. IMPACT ANALYSIS WITH AN INPUT-OUTPUT MODEL

The most common use of a regional I-O model is impact analysis, which is the estimation of production changes which would occur in the economy as a result of increased or decreased output in a given sector. This technique can provide information to planners on the ramifications of a proposed project or give policy-makers an idea as to how government actions might impact on the size of various sectors.

Rather than describing the technique in general terms, a specific example of impact analysis is presented. This will include the quantitative and mathematical steps and an interpretation of the quantitative results. The example simulates the least complicated situation, a direct change in the output of one industry. The sample case is the construction phase of the Hawaii Convention Center.

An I-O table is year specific; all the entries in the table represent data on one-year basis. A new project may last several years such as the Hawaii Convention Center. Because of the effect of inflation, the economic impact is different for different years. Economic impact should be calculated on a yearly basis, not on a lump-sum basis. The economic impact measure is valid only for the specific year. Once a construction project is finished, the economic impact from that phase of the project dissipates. However, the impact from the operations of the facility begins. In the case of the Hawaii Convention Center, the construction started in 1993 and was completed in 1997, at which time operations began. The analysis below is limited to the construction phase.

DIRECT OUTPUT IMPACT

There are six construction sectors in the I-O table. Since the Convention Center is for commercial use, it falls into the industry of new industrial and commercial buildings. Spending on the Convention Center construction phase is shown in Table 6.1.

**Table 6.1 Construction Expenditures of
Hawaii Convention Center**

Fiscal Year	Construction Spending (\$mil.)
1993-94	0.47
1994-95	21.40
1995-96	63.80
1996-97	101.00
1997-98	31.80

The construction dollars were injected directly into the Hawaii economy for the years listed. These are the direct output impacts.

INDIRECT OUTPUT IMPACT

The impact on the economy was not limited to this direct effect, however, input purchases by the construction firm and consumption purchases by its employees created more business activity. The multipliers in Table 5.1 help estimate these effects.

The indirect output impacts are estimated using the Type I output multiplier in Table 5.1. In this case, the Type I output multiplier for Industry 22, New Industrial and Commercial Buildings, is 1.28. This means that with each \$1 direct change in constructing new industrial and commercial buildings, other sectors will be changed a total of about \$0.28. Thus, the \$31.8 million spending in the construction of Hawaii Convention Center in 1997 produced another \$8.9 million in sales in other industries.

Likewise, the direct and indirect output impacts can be calculated for the other years by multiplying the direct impacts by the Type I multiplier (1.28 for the industry under study), the indirect impact can be calculated by subtracting the direct impact from the combined direct and indirect impact.

The results for the Hawaii Convention Center impacts are presented in Table 6.2 below:

**Table 6.2 Direct and Indirect Output Impact
of Hawaii Convention Center Construction (\$mil.)**

Fiscal Year	Direct and indirect impact	Indirect impact only
1993-94	0.60	0.13
1994-95	27.39	5.99
1995-96	81.66	17.86
1996-97	129.28	28.28
1997-98	40.70	8.90

INDUCED OUTPUT IMPACT

The incomes generated by the direct and indirect output changes induce further productive activity of their own through consumption expenditures. This is called the induced output effect and it is estimated using the Type II output multiplier from Table 5.1. The Type II output multiplier of 2.10 for New Industrial and Commercial Buildings indicates that, for each dollar change in the industry's output, the total direct, indirect and induced effect on the economy will be about \$2.10 or that the production *induced* per dollar of associated income would be approximately \$.82 (\$2.10 - \$1.28, Type II multiplier – Type I multiplier). Total output impacts including direct, indirect and induced effects can be calculated by multiplying the direct impact by the Type II output multiplier. The induced impact can be calculated by multiplying the direct impact by the difference between the Type II multiplier and Type I multiplier. The results are shown in Table 6.3.

**Table 6.3 Induced Output Impact of Hawaii
Convention Center Construction (\$mil.)**

Fiscal Year	Direct, indirect and induced impact	Induced impact only
1993-94	0.99	0.39
1994-95	44.94	17.55
1995-96	133.98	52.32
1996-97	212.10	82.82
1997-98	66.78	26.08

The relationships between direct, indirect, and induced impacts are summarized in Table 6.4.

Table 6.4 Relationship Between Output Impacts (\$mil.)

Fiscal Year	Direct impact	Direct and indirect impact	Direct, indirect, and induced impact	Indirect impact only	Induced impact only
	A	B	C	D	E
1993-94	0.47	0.60	0.99	0.13	0.39
1994-95	21.40	27.39	44.94	5.99	17.55
1995-96	63.80	81.66	133.98	17.86	52.32
1996-97	101.00	129.28	212.10	28.28	82.82
1997-98	31.80	40.70	66.78	8.90	26.08

Note:

Column A is the direct spending on Hawaii Convention Center construction

Column B = Column A \times Type I output multiplier (1.28)

Column C = Column A \times Type II output multiplier (2.10)

Column D = Column B – Column A

Column E = Column C – Column B

INCOME IMPACTS

The effect of a new production on household income is called the income impact. Household income (wages, salaries, benefits and proprietors income) is the major portion of personal income and Gross State Product.

There are two income multipliers derived from the 1992 I-O model: one measured in terms of income generated per dollar of final demand (final-demand income multiplier),

and the other is measured in terms of total income generated per dollar of direct income (direct-effect income multiplier). Either multiplier can be used to calculate the income impact.

The direct income impact can be calculated using the information in the I-O table. Labor income divided by the total input in the Appendix Table A is the direct income requirement coefficient (or direct purchase coefficient). For New Industrial and Commercial Construction, this coefficient is 0.45, which means that for each dollar delivered to final demand, the industry pays 45 cents to household as wages and fringe benefits. The direct income impact is then the product of the construction spending and the direct income requirement coefficient.

The indirect and induced income impact can be calculated in two ways: using the direct-effect income multiplier, or using the final-demand income multiplier. Table 6.5 presents the calculations of income impact using the direct-effect income multiplier, and Table 6.6 presents the income impact using the final-demand income multiplier.

Table 6.5 Income Impact Using Direct-Effect Income Multiplier (\$mil.)

Fiscal Year	Direct impact	Direct and indirect impact	Direct, indirect, and induced impact	Indirect impact only	Induced impact only
	A	B	C	D	E
1993-94	0.21	0.27	0.41	0.05	0.14
1994-95	9.63	12.13	18.48	2.50	6.36
1995-96	28.71	36.17	55.12	7.46	18.95
1996-97	45.45	57.27	87.26	11.82	30.00
1997-98	14.31	18.03	27.48	3.72	9.44

Note:

Column A = direct HCC construction spending \times 0.45 (direct income coefficient)

Column B = Column A \times Type I direct-effect income multiplier (1.26)

Column C = Column A \times Type II direct-effect income multiplier (1.92)

Column D = Column B – Column A

Column E = Column C – Column B

Table 6.6 Income Impact Using Final-Demand Income Multiplier (\$mil.)

Fiscal Year	Direct HCC construction expenditure	Direct and indirect income impact	Direct, indirect, and induced income impact
	A	B	C
1993-94	0.47	0.27	0.41
1994-95	21.40	12.20	18.62
1995-96	63.80	36.37	55.51
1996-97	101.00	57.57	87.87
1997-98	31.80	18.13	27.67

Note:

Column A is the direct spending on Hawaii Convention Center construction

Column B = Column A \times Type I final-demand income multiplier (0.57)

Column C = Column A \times Type II final-demand income multiplier (0.87)

Impacts calculated using both types of income multipliers should be the same, however, they are slightly different in Tables 6.5 and 6.6 because of rounding.

EMPLOYMENT IMPACTS

In analyses of this type it is also common to estimate employment impacts. The procedure uses employment-output ratios and employment multipliers in a manner similar to that described for income-output ratios and income multipliers in the previous section.

There are two kinds of jobs modeled in the 1992 I-O: wage and salary jobs and total jobs. Total jobs include both wage and salary jobs and self-employment jobs. For each job type, there are two employment multipliers: one measured in terms of jobs generated per dollar of final demand (final-demand employment multiplier), and the other is measured in terms of total jobs generated per direct job (direct-effect employment multiplier). Either multiplier can be used to calculate the employment impact. Multipliers for total jobs are used to derive the employment impact in the Hawaii Convention Center example; therefore, the jobs generated by constructing the Center include wage and salary jobs and self-employment jobs.

The direct employment impact is calculated by multiplying the direct spending in construction by the direct employment coefficient. The direct employment coefficient is calculated from the I-O table, specifically Table A of Appendix A. The total jobs row is divided by total input row. The direct employment coefficient for New Industrial and Commercial Buildings is 11.43, meaning that in 1992 there were 11.43 jobs in commercial construction for every million dollar of construction spending. Because of changes in construction costs and construction worker's productivity over time, the direct employment coefficients tend to change over time. Assuming labor productivity remains constant, then the employment coefficient will change according to the inflation rate for construction. Applying this ratio to construction expenditures for Hawaii Convention

Center, the direct employment impact can be calculated. Employment impact can be calculated using either the direct-effect employment multiplier or the final-demand employment multiplier. Table 6.7 presents the calculations of employment impact using the direct-effect employment multiplier, and Table 6.8 presents the employment impact using the final-demand employment multiplier.

Table 6.7 Employment Impact Using Direct-Effect Employment Multiplier (jobs)

Fiscal Year	Direct HCC construction expenditure	Inflation factor in construction	Direct employment impact	Direct and indirect employment impact	Direct, indirect, and induced employment impact	Indirect employment impact only	Induced employment impact only
	A	B	C	D	E	F	G
1993-94	0.47	1.05	5.14	6.78	11.77	1.64	4.99
1994-95	21.40	1.11	221.23	292.03	506.62	70.79	214.59
1995-96	63.80	1.15	635.28	838.57	1454.79	203.29	616.22
1996-97	101.00	1.18	981.61	1295.73	2247.89	314.12	952.16
1997-98	31.80	1.19	305.40	403.13	699.37	97.73	296.24

Note:

Column A = direct HCC construction spending

Column B = Construction cost index for high-rise buildings at year t ÷ construction cost index for high-rise building 1992

Column C = Column A ÷ Column B × 11.43 (direct employment coefficient)

Column D = Column C × Type I direct-effect employment multiplier (1.32)

Column E = Column C × Type II direct-effect employment multiplier (2.29)

Column F = Column D – Column C

Column G = Column E – Column D

Table 6.8 Employment Impact Using Final-Demand Employment Multiplier (jobs)

Fiscal Year	Direct HCC construction expenditure	Inflation factor in construction	Direct and indirect employment impact	Direct, indirect, and induced employment impact
	A	B	C	D
1993-94	0.47	1.05	6.77	11.74
1994-95	21.40	1.11	291.50	505.50
1995-96	63.80	1.15	838.83	1454.64
1996-97	101.00	1.18	1294.17	2244.25
1997-98	31.80	1.19	404.05	700.67

Note:

Column A is the direct spending on Hawaii Convention Center construction

Column B = Construction cost index for high-rise buildings at year t ÷ construction cost index for high-rise building 1992

Column C = Column A ÷ Column B × Type I final-demand employment multiplier (15.12)

Column D = Column A ÷ Column B × Type II final-demand employment multiplier (26.22)

Impacts calculated using both types of job multipliers should be the same, however, they are slightly different in Tables 6.7 and 6.8 because of rounding.

CONSIDERATIONS AND CAUTIONS REGARDING IMPACT ANALYSIS

When conducting an impact analysis, several general considerations and cautions should be kept in mind:

1. There is no single multiplier for the Hawaii economy. The question is often heard: what is the multiplier for Hawaii? This question makes little sense, since there are, in fact, many multipliers. Table 5-1 contains 1,652 multipliers and there are still many more. A multiplier is simply the ratio of two changes, the dependent change being the numerator and the independent change being the denominator.
2. One example of misuse the I-O model is to add output and household income impacts together. In Impact analysis, output, income and employment impacts are three different measurement of the same project. When describing the size of a company, we often refer to the sales of the company, or the number of people the company employs, or the amount of profit the company derives. But we would not add any of these measures together. Likewise, output and income impacts in I-O cannot meaningfully be added together. Output (sales) impact includes the household income impact since a company has to pay its employees from its sale receipts.

3. Outputs in several industries are measured not by sales, but by their trade margins. These industries include retail trade, wholesale trade, finance, insurance, and real estate. When calculating economic impacts of these industries, caution needs to be exercised in calculating the direct output. For example, a new duty-free store may have sales of \$100 million in a year. But this amount includes the cost of the merchandise imported from out-of-state, as well as transportation costs, and the mark-up value by the store. But in I-O, only the “mark-up” value is counted as the output of the store.

4. The output of general government (Federal Military, Federal Civilian, and State and local government) is measured only by their employee compensation. “General” Government activity refers to non-enterprise operations. It is standard practice to include general governments as industries in Input-Output models in order to balance the transactions of government spending. Government expenditures are presented in the final demand sectors. Employee compensation is part of their spending. When conducting economic impact analysis for government spending, care needs to be taken in defining direct output. For example, an impact analysis on an increase in State and local government spending may be done under three cases. (1) Spending is specific on a product or an industry, say road construction. In this case, the multipliers of the industry that produces the product should be used to calculate the impacts. (2) Spending is not specific. In this case, assumptions of the spending pattern need to be made. It is usually assumed that government spending is proportionally the same as the base model year. After assigning the new spending to all the industries according to the share of State and local government spending in the base year, the multipliers of all the industries should be used to calculate the economic impact. (3) Spending is specific to an increase in payroll. In this case the multipliers of State and Local Government should be used to calculate the economic impacts.

5. A change in final demand always causes another change in the final demand. Impact analysis should be done for all the changes, and then calculate the net of the changes. For example, a decrease in State government spending by lowering income tax rate may, at the same time, increase personal consumption expenditures. The economic impact would be the net effect of the decrease in government spending and the increase in personal consumption expenditures.

6. The values of multipliers depend upon the simplified behavioral assumptions underlying the input-output model. Four important restrictions are placed on the Type II multipliers: (1) the behavioral equations are linear; (2) the direct purchase coefficients are assumed constant; (3) consumption is a simple function of labor income; and (4) the effects of induced state and local government spending and capital investment are zero. If any of these assumptions were to be altered, the multiplier estimates would change.

7. High multipliers are not necessary good, and low multipliers are not necessary bad. When evaluating the relative benefits of alternative projects, it is sometimes suggested that the development with the highest multiplier should be promoted. This may not be the case

for two reasons. First, the results of evaluation in general depend upon the kind of multiplier being compared. A project with a high income multiplier may have a low employment multiplier or a high energy use multiplier, resulting in inconsistencies when ranking projects by the size of their multipliers. Second, limiting the evaluation to the size of the multipliers neglects the relative costs of the proposed developments. Such things as capital costs, public investment, and tax incentives should also be considered.

8. Multipliers and impact measurements are only estimates of the anticipated economic effects of an external change. Impact analysis is a forecasting exercise and forecasts are bound to be wrong, to a degree. Inaccurate impact estimates occur for a number of reasons, including the misuse of the input-output model, model misspecification, incorrect projections of the direct impact, measurement errors in the base year input-output coefficients, and outdated input-output coefficients. It is therefore inappropriate to calculate the income impacts of a multi-million dollar project down to the last dollar. The analyst should recognize the limitations on the tool being used.

REFERENCES

- Bureau of Economic Analysis (BEA), U.S. Department of Commerce, *Benchmark Input-Output Accounts of the United States* – 1987, November 1994.
- Bureau of Economic Analysis (BEA), U.S. Department of Commerce, Table SA5 – Total Personal Income By Major Sources : 1969–1995, Electronic File, September 24, 1996.
- Bureau of Economic Analysis (BEA), U.S. Department of Commerce, Table SA5 – Total Full and Part Time Total Employment By Industry: 1969–1995, Electronic File, September 24, 1996.
- Bureau of Economic Analysis (BEA), U.S. Department of Commerce, Table SA27 – Full and Part Time Wage and Salary Employment By Industry: 1969–1995, Electronic File, September 24, 1996.
- Bureau of Economic Analysis (BEA), U.S. Department of Commerce, Gross State Product By Industry: 1977–1994, Electronic File, June 3, 1997.
- City and County of Honolulu, *Comprehensive Annual Financial Report, Fiscal Year 1992*.
- County of Maui, *Comprehensive Annual Financial Report, Fiscal Year 1992*.
- County of Hawaii, *Comprehensive Annual Financial Report, Fiscal Year 1992*.
- County of Kauai, *Comprehensive Annual Financial Report, Fiscal Year 1992*.
- Dick Conway and Associates, *1987 Input-Output Tables for Hawaii State, Hawaii County, and Kauai County*, January 19, 1993, Unpublished Research Report.
- Hawaii Department of Accounting and General Services, *Comprehensive Annual Financial Report, Fiscal Year 1992*.
- Hawaii Agricultural Statistics Service, *1992 Statistics of Hawaiian Agriculture*, October 1993.
- Hawaii Department of Accounting and General Services, *Supplemental Detail to the Comprehensive Annual Financial Report, Fiscal Year 1992*.
- Hawaii Department of Business, Economic Development and Tourism (DBEDT), *Quarterly Statistical and Economic Report*, June 1997.

- Hawaii Department of Business, Economic Development and Tourism (DBEDT), *The State of Hawaii Data Book: A Statistical Abstract*, 1995.
- Hawaii Department of Labor and Industrial Relations (DLIR), *1992 Employment and Payrolls in Hawaii*, September 1993.
- Hawaii Department of Planning and Economic Development, February 1988, unpublished research report, *The Hawaii Input-Output Study: 1982*,
- Hawaii Visitors and Convention Bureau, *1992 Visitor Expenditure Survey*, 1992.
- Miller, R.E., and P.D. Blair, *Input-Output Analysis: Foundations and Extensions*. Englewood Cliffs, New Jersey: Prentice Hall, 1985.
- Office of Management and Budget, Executive Office of President, *Standard Industrial Classification (SIC) Manual*, 1987.
- Taylor, Carol, Susan Winter, Greg Alward, and Eric Siverts. *Micro IMPLAN User's Guide, Version 91-F*. U.S. Department of Agriculture, Forest Service, May 1993. Modified by Douglas Olson and Scott Lindall of the Minnesota IMPLAN Group, Inc., March 1994.
- U.S. Department of the Army, Corps of Engineers, *Waterborne Commerce of the United States, Calendar year 1992*, Part 4 (April 1995), pp. 84–101.
- U.S. Department of Commerce, *1992 Census of Construction Industries - Geographic Area Series: Pacific States*, April 1995.
- U.S. Department of Commerce, *1992 Census of Finance, Insurance, and Real Estate Industries - Geographic Area Series*, March 1995.
- U.S. Department of Commerce, *1992 Census of Mineral Industries - Geographic Area Series: Pacific States*, April 1995.
- U.S. Department of Commerce, *1992 Census of Retail Trade - Geographic Area Series: Hawaii*, October 1994.
- U.S. Department of Commerce, *1992 Census of Wholesale Trade - Geographic Area Series: Hawaii*, November 1994.
- U.S. Department of Commerce, *1992 Census of Service Industries - Geographic Area Series: Hawaii*, August 1994.
- U.S. Department of Commerce, *1992 Census of Manufactures - Geographic Area Series: Hawaii*, August 1995.

U.S. Department of Labor, Bureau of Labor Statistics, *Average Annual Expenditures, Characteristics and Sources of Income of Consumer Units, Selected Western Metropolitan Statistical Areas, 1991- 92*, December 1993 and 1992-93, December 1994.

U.S. Department of Labor, Bureau of Labor Statistics, *Comparison of Aggregate Expenditures for Selected Expenditure Categories: Consumer Expenditures (CE) Survey and Personal Consumption Expenditures (PCE) : 1992- 1995*, Unpublished Report, January 1997.

APPENDIX A. THE 1992 HAWAII STATE INPUT-OUTPUT TABLE

1992 Hawaii State Input-Output Table (in \$ million)

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

	1	2	3	4	5	6	7	8	9	10	11	12
Industry	Sugar crops	Vegetables	Tree nuts	Pineapple	Other fruits	Coffee	Greenhouse and nursery products	Dairy farm products	Poultry and eggs	Cattle and calves	Hogs, pigs, & swine	Misc. livestock
88 Computer and data processing services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89 Security services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90 Other business services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
91 Auto rental and leasing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92 Auto repairs and services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 Electric repair services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94 Misc. repair services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
95 Motion pictures and video rental	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96 Theatrical services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97 Misc. amusement services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 Membership sports and recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99 Museums, zoos, and botanical gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Doctors and dentists	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101 Nursing and protective care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 Hospitals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 Other medical and health services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104 Legal services	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
105 Educational services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106 Child day care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107 Residential care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108 Membership organizations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109 Engineering and architectural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110 Accounting, auditing, and bookkeeping	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
111 Management and consulting services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112 Research, development and testing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
113 Other services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114 State and local govt. enterprises	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115 Fed govt. enterprises	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116 Federal govt: Military	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117 Federal govt. Nonmilitary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118 State and local government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	40.7	7.9	10.7	21.0	6.1	1.6	20.3	15.2	6.4	11.0	3.1	0.3
Value added	104.0	19.9	18.1	68.0	12.2	2.2	42.6	10.0	5.5	10.5	2.3	1.5
Labor income	75.2	11.1	10.5	33.6	6.8	1.3	24.8	7.4	4.1	7.8	1.7	1.1
Other value added	28.8	8.7	7.6	34.5	5.4	1.0	17.8	2.6	1.4	2.7	0.6	0.4
Imports	9.0	8.9	3.8	13.0	4.2	0.2	7.0	7.4	3.5	7.9	1.1	2.4
Total input	153.7	36.7	32.6	102.0	22.5	4.0	69.9	32.6	15.4	29.4	6.5	4.2
Wage & salary jobs	3,001.0	836.0	742.0	1,512.0	649.0	83.0	1,263.0	531.0	184.0	547.0	44.0	40.0
Total jobs	3,353.0	1,589.0	1,410.0	1,512.0	1,232.0	158.0	1,923.0	808.0	280.0	833.0	300.0	150.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

	13	14	15	16	17	18	19	20	21	22	23	24
Industry	Aquaculture	Commercial fishing	Forestry and forest products	Other agricultural crops	Agricultural, forestry, and fishery products	Landscape and horticultural services	Mining	Single Family	Multiple family	New industrial & commercial buildings	Hotels	Road Construction
45 Stone, clay, glass, concrete products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.6	5.7	41.0	21.3	34.8
46 Primary metals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47 Fabricated metal products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.7	7.2	2.5	1.0
48 Machinery and appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2	0.5	0.0	0.3
49 Transportation equipment	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50 Misc. manufacturing products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
51 Taxies, limousines, buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.3	0.0	0.1
52 Motor freight transportation & warehousing	0.0	0.0	0.0	0.1	0.2	0.4	0.1	4.6	1.4	7.4	2.4	6.1
53 Water transportation	0.0	0.0	0.0	0.1	0.1	0.2	0.0	2.1	0.4	1.7	0.4	1.0
54 Air transportation	0.0	0.0	0.0	0.0	0.8	1.5	0.0	0.1	0.0	0.5	0.0	0.1
55 Transportation services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3
56 Telephone, beeper, cellular	0.0	0.0	0.0	0.1	1.1	2.0	0.1	0.7	0.2	1.3	0.4	0.7
57 Cable TV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58 Radio and TV broadcasting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	3.7	17.3	0.0	9.1
59 Other communications	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	2.0	9.2	11.3	4.8
60 Electricity	0.0	0.0	0.0	0.1	0.2	0.0	0.4	0.3	0.1	0.7	0.2	0.2
61 Gas production & distribution	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.1
62 Water & sanitary services	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.1
63 Wholesale trade	0.2	3.2	0.0	0.4	3.8	7.2	0.6	23.0	5.6	27.4	7.9	5.0
64 Eating and drinking	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.1
65 Building materials & gardening	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.7	1.7	0.5	0.4
66 General merchandise stores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	2.1	4.9	1.7	1.0
67 Food stores	0.0	0.0	0.0	0.1	0.0	0.0	0.0	4.8	1.4	3.4	1.2	0.7
68 Automotive dealers & service stations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	1.5	3.7	1.2	0.8
69 Apparel & accessory stores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	1.6	3.7	1.2	0.9
70 Furniture and home furnishings stores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.5	1.4	0.4	0.3
71 Misc. retail	0.0	0.0	0.0	0.1	0.0	0.0	0.0	8.7	2.6	6.3	2.2	1.4
72 Banking and credit agencies	0.0	0.0	0.0	0.0	0.8	0.0	0.2	2.8	0.7	5.2	1.4	1.6
73 Security and commodity brokers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74 Insurance and insurance agencies	0.0	0.0	0.0	0.1	0.2	0.4	0.1	0.7	0.2	1.3	0.4	0.4
75 Owner-occupied dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 Real estate	0.0	0.0	0.0	0.4	0.0	2.1	0.3	0.5	0.2	1.0	0.3	0.3
77 Hotels and lodging places	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.4	0.1	0.1
78 Laundry, cleaning, and shoe repairs	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.2	0.1	0.5	0.3	0.3
79 Portrait photography	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80 Beauty and barber shops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81 Funeral services and crematories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82 Misc. personal services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83 Advertising	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84 Photofinishing & commercial photography	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85 Services to buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.5	0.1	0.3
86 Equipment rental and leasing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.5	0.1	0.3
87 Employment services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.4	2.5	0.5	1.3

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	13	14	15	16	17	18	19	20	21	22	23	24
	Aquaculture	Commercial fishing	Forestry and forest products	Other agricultural crops	Agricultural, forestry, and fishery products	Landscape and horticultural services	Mining	Single Family	Multiple family	New industrial & commercial buildings	Hotels	Road Construction
88 Computer and data processing services	0.0	0.0	0.0	0.0	0.0	0.3	1.2	0.1	0.0	0.0	0.0	0.0
89 Security services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.1
90 Other business services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.1
91 Auto rental and leasing	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.0	0.1	0.0	0.5	0.3
92 Auto repairs and services	0.0	0.0	0.0	0.0	0.0	0.4	1.3	0.0	0.4	1.9	0.5	1.2
93 Electric repair services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94 Misc. repair services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.1	0.4
95 Motion pictures and video rental	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96 Theatrical services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97 Misc. amusement services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 Membership sports and recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99 Museums, zoos, and botanical gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Doctors and dentists	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101 Nursing and protective care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 Hospitals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 Other medical and health services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104 Legal services	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.0	1.4	3.7	0.9	2.0
105 Educational services	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
106 Child day care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107 Residential care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108 Membership organizations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109 Engineering and architectural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.9	3.7	37.9	8.9	20.1
110 Accounting, auditing, and bookkeeping	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.5	4.7	1.2	2.5
111 Management and consulting services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.6	6.6	1.5	3.5
112 Research, development and testing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	1.3	0.3	0.7
113 Other services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114 State and local govt. enterprises	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.2	0.9	0.0	0.5
115 Fed govt. enterprises	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
116 Federal govt: Military	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117 Federal govt. Nonmilitary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118 State and local government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	0.2	21.2	0.0	5.8	11.8	29.8	3.2	163.0	43.5	233.0	77.5	126.5
Value added	2.5	30.5	0.8	7.6	64.4	97.3	27.3	444.0	121.5	538.2	162.9	282.4
Labor income	1.9	14.8	0.5	4.3	52.3	79.0	17.0	377.6	97.7	492.0	144.3	228.3
Other value added	0.6	15.7	0.3	3.4	12.1	18.3	10.3	66.3	23.8	46.2	18.6	54.1
Imports	3.7	10.9	2.3	0.5	17.8	15.0	4.0	184.3	51.6	316.1	88.8	64.1
Total input	6.4	62.6	3.1	13.9	94.0	142.1	34.5	791.3	216.6	1,087.3	329.2	473.0
Wage & salary jobs	87.0	160.0	17.0	242.0	2,138.0	2,882.0	305.0	5,334.0	1,069.0	10,155.0	2,631.0	4,296.0
Total jobs	155.0	1,683.0	42.0	369.0	2,979.0	4,014.0	506.0	6,529.0	1,309.0	12,430.0	3,221.0	5,258.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	25	26	27	28	29	30	31	32	33	34	35	36
	Other construction	Maintenance & repairs	Pineapple processing	Other canned fruits	Sugar processing	Confectionery products	Salted & roasted nuts and seeds	Meat products	Milk products	Grain & bakery products	Beverages	Other food and tobacco products
1 Sugar crops	0.0	0.0	0.0	0.0	153.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 Vegetables	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 Tree nuts	0.0	0.0	0.0	0.0	0.0	4.7	22.0	0.0	0.0	0.8	0.0	3.6
4 Pineapple	0.0	0.0	51.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 Other fruits	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
6 Coffee	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.2
7 Greenhouse and nursery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
8 Dairy farm products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.7	0.0	0.0	0.0
9 Poultry and eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.1	0.0	0.1
10 Cattle and calves	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0
11 Hogs, pigs, & swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0
12 Misc. livestock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 Aquaculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
14 Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.7
15 Forestry and forest products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 Other agricultural products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2
17 Agricultural, forestry, and fishery services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 Landscape and horticultural services	0.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 Mining	3.0	3.4	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 Single family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 Multiple family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 New industrial & commercial buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 Hotel construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 Road construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 Other construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 Maintenance & repairs	0.1	0.1	0.4	0.1	0.2	0.1	0.0	0.1	0.2	0.3	0.6	0.3
27 Pineapple processing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 Other canned and frozen fruits & vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
29 Sugar processing	0.0	0.0	0.0	0.0	0.0	1.9	0.1	0.0	0.3	1.0	5.9	0.6
30 Confectionery products	0.0	0.0	0.0	0.1	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.6
31 Salted & roasted nuts and seeds	0.0	0.0	0.1	0.0	0.0	0.0	1.7	0.0	0.0	0.8	0.0	1.7
32 Meat products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.4	0.0	0.5
33 Milk products	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	7.6	0.2	0.0	0.2
34 Grain & bakery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
35 Beverages	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7	0.5
36 Other food and tobacco products	0.0	0.0	0.4	0.4	0.0	0.5	0.3	0.1	0.0	4.2	0.5	3.8
37 Apparel and textiles	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38 Lumber and wood products	2.8	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39 Furniture & fixtures	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40 Paper & allied products	0.0	0.0	1.3	0.3	0.8	0.2	0.2	0.8	1.9	1.3	1.5	3.2
41 Printing & publishing	0.2	0.2	1.0	0.3	0.5	0.2	0.2	0.5	0.2	0.6	2.3	2.9
42 Chemicals and allied products	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.1	0.2	0.2	0.5
43 Petroleum refining & products	1.7	2.2	1.0	0.1	6.9	0.1	0.0	0.1	0.1	0.3	0.3	0.2
44 Rubber & plastic products	0.1	0.4	0.0	0.1	0.1	0.1	0.1	0.0	0.2	0.0	0.0	0.3

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

	25	26	27	28	29	30	31	32	33	34	35	36
Industry	Other construction	Maintenance & repairs	Pineapple processing	Other canned fruits	Sugar processing	Confectionery products	Salted & roasted nuts and seeds	Meat products	Milk products	Grain & bakery products	Beverages	Other food and tobacco products
45 Stone, clay, glass, concrete products	14.6	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46 Primary metals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47 Fabricated metal products	2.4	1.1	11.7	8.4	0.0	0.0	0.2	0.3	0.1	0.0	22.1	0.8
48 Machinery and appliances	0.2	0.2	0.0	0.3	0.3	0.0	0.1	0.0	0.0	0.4	0.6	0.1
49 Transportation equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50 Misc. manufacturing products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51 Taxies, limousines, buses	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
52 Motor freight transportation & warehousing	4.0	2.5	1.8	2.0	3.2	1.8	0.8	0.7	0.3	0.9	2.6	3.6
53 Water transportation	0.7	0.5	3.4	0.9	1.6	0.5	0.4	0.1	0.1	0.8	1.1	1.5
54 Air transportation	0.2	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.2	0.1
55 Transportation services	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
56 Telephone, beeper, cellular	0.4	0.5	0.4	0.2	0.1	0.2	0.1	0.1	0.2	0.7	1.2	0.7
57 Cable TV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58 Radio and TV broadcasting	6.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59 Other communications	3.2	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60 Electricity	0.3	0.2	1.6	0.3	2.1	0.3	0.2	0.3	0.5	0.3	0.5	0.4
61 Gas production & distribution	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1
62 Water & sanitary services	0.0	0.0	1.2	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.0	0.1
63 Wholesale trade	10.9	8.2	3.2	8.8	6.7	5.4	4.3	4.0	2.5	3.9	11.1	9.7
64 Eating and drinking	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.1
65 Building materials & gardening	0.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66 General merchandise stores	0.9	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67 Food stores	0.7	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
68 Automotive dealers & service stations	0.8	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
69 Apparel & accessory stores	0.7	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70 Furniture and home furnishings stores	0.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71 Misc. retail	1.3	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72 Banking and credit agencies	2.0	1.2	0.5	0.3	0.3	0.2	0.3	0.0	0.3	0.3	1.4	0.5
73 Security and commodity brokers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74 Insurance and insurance agencies	0.5	0.3	0.4	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.2
75 Owner-occupied dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 Real estate	0.3	0.3	2.0	0.3	7.4	0.2	0.1	0.1	0.3	0.5	0.8	0.3
77 Hotels and lodging places	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
78 Laundry, cleaning, and shoe repairs	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1
79 Portrait photography	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80 Beauty and barber shops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81 Funeral services and crematories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82 Misc. personal services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83 Advertising	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.5	0.2
84 Photofinishing & commercial photography	0.0	0.0	0.9	1.2	0.0	0.8	0.7	0.0	0.6	1.2	3.3	1.4
85 Services to buildings	0.3	0.0	0.1	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2
86 Equipment rental and leasing	0.3	0.3	0.9	1.1	0.3	0.7	0.6	0.1	0.5	1.0	2.5	1.4
87 Employment services	1.3	0.1	0.4	0.5	0.1	0.3	0.3	0.0	0.0	0.0	0.2	0.6

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	25	26	27	28	29	30	31	32	33	34	35	36
	Other construction	Maintenance & repairs	Pineapple processing	Other canned fruits	Sugar processing	Confectionery products	Salted & roasted nuts and seeds	Meat products	Milk products	Grain & bakery products	Beverages	Other food and tobacco products
88 Computer and data processing services	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1
89 Security services	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
90 Other business services	0.1	0.0	0.4	0.4	0.0	0.3	0.3	0.0	0.2	0.5	0.9	0.5
91 Auto rental and leasing	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.1
92 Auto repairs and services	0.9	0.2	0.1	0.1	0.0	0.2	0.0	0.0	0.0	0.5	0.1	0.1
93 Electric repair services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
94 Misc. repair services	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
95 Motion pictures and video rental	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96 Theatrical services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97 Misc. amusement services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 Membership sports and recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99 Museums, zoos, and botanical gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Doctors and dentists	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101 Nursing and protective care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 Hospitals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 Other medical and health services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104 Legal services	3.0	0.1	0.4	0.1	0.4	0.1	0.0	0.1	0.1	0.3	0.3	0.2
105 Educational services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106 Child day care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107 Residential care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108 Membership organizations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
109 Engineering and architectural services	31.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110 Accounting, auditing, and bookkeeping	4.0	0.1	1.0	0.0	0.5	0.0	0.0	0.0	0.0	1.5	0.2	0.3
111 Management and consulting services	5.4	0.1	0.2	0.0	0.3	0.0	0.0	0.0	0.1	0.1	0.1	0.1
112 Research, development and testing	1.1	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
113 Other services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114 State and local govt. enterprises	0.5	0.0	0.8	1.5	1.1	0.0	0.0	0.0	1.5	3.1	2.3	1.3
115 Fed govt. enterprises	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
116 Federal govt: Military	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117 Federal govt. Nonmilitary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118 State and local government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	108.7	58.7	88.1	31.8	187.9	20.3	36.0	27.4	50.4	28.7	74.6	57.9
Value added	270.8	293.4	43.5	19.4	80.6	16.1	22.8	12.9	31.0	40.5	44.9	37.7
Labor income	218.9	266.8	32.4	12.5	57.7	10.4	14.7	9.9	23.0	30.9	25.9	24.3
Other value added	51.9	26.6	11.1	6.9	22.9	5.8	8.1	2.9	8.0	9.6	19.0	13.4
Imports	103.3	74.3	10.1	32.8	11.9	33.4	39.8	29.4	41.8	22.9	85.0	67.6
Total input	482.8	426.4	141.7	84.0	280.4	69.8	98.6	69.7	123.2	92.1	204.5	163.2
Wage & salary jobs	4,384.0	5,105.0	1,209.0	456.0	2,222.0	379.0	536.0	460.0	512.0	1,051.0	692.0	886.0
Total jobs	5,366.0	6,249.0	1,209.0	468.0	2,222.0	389.0	550.0	472.0	525.0	1,078.0	710.0	910.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	37	38	39	40	41	42	43	44	45	46	47	48
	Apparel and textiles	Lumber and wood products	Furniture & fixtures	Paper & allied products	Printing & publishing	Chemicals and allied products	Petroleum refining & products	Rubber & plastic products	Stone, clay, glass, concrete products	Primary metals	Fabricated metal products	Machinery and appliances
1 Sugar crops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 Vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 Tree nuts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 Pineapple	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 Other fruits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 Coffee	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Greenhouse and nursery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 Dairy farm products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 Poultry and eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 Cattle and calves	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11 Hogs, pigs, & swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 Misc. livestock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 Aquaculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 Forestry and forest products	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 Other agricultural products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 Agricultural, forestry, and fishery services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 Landscape and horticultural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 Mining	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	6.2	0.0	0.0	0.0
20 Single family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 Multiple family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 New industrial & commercial buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 Hotel construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 Road construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 Other construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 Maintenance & repairs	0.2	0.1	0.1	0.1	0.6	0.2	1.3	0.1	0.4	0.0	0.2	0.1
27 Pineapple processing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 Other canned and frozen fruits & vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29 Sugar processing	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 Confectionery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 Salted & roasted nuts and seeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32 Meat products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33 Milk products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34 Grain & bakery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35 Beverages	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36 Other food and tobacco products	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
37 Apparel and textiles	11.0	0.0	0.4	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
38 Lumber and wood products	0.0	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39 Furniture & fixtures	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40 Paper & allied products	0.2	0.1	0.1	0.4	0.5	0.5	0.5	0.2	0.1	0.0	0.1	0.1
41 Printing & publishing	0.3	0.0	0.2	0.2	20.5	0.7	0.9	0.9	0.3	0.0	0.3	0.3
42 Chemicals and allied products	0.1	0.2	0.0	0.1	0.4	9.9	3.3	0.8	0.2	0.0	0.0	0.0
43 Petroleum refining & products	0.1	0.1	0.1	0.1	1.7	1.6	6.6	0.2	1.0	0.0	0.0	0.0
44 Rubber & plastic products	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.3	0.0	0.0	0.0	0.3

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	37	38	39	40	41	42	43	44	45	46	47	48
	Apparel and textiles	Lumber and wood products	Furniture & fixtures	Paper & allied products	Printing & publishing	Chemicals and allied products	Petroleum refining & products	Rubber & plastic products	Stone, clay, glass, concrete products	Primary metals	Fabricated metal products	Machinery and appliances
45 Stone, clay, glass, concrete products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0	0.0
46 Primary metals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0
47 Fabricated metal products	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	1.0	0.0
48 Machinery and appliances	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.3	0.0	0.1	2.8
49 Transportation equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50 Misc. manufacturing products	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51 Taxies, limousines, buses	0.5	0.0	0.1	0.1	4.1	0.2	0.1	0.1	0.1	0.0	0.1	0.0
52 Motor freight transportation & warehousing	1.1	0.2	0.2	0.4	4.9	3.5	2.1	0.4	6.1	0.0	0.5	0.3
53 Water transportation	0.1	0.3	0.1	0.4	1.9	0.9	0.1	0.2	1.4	0.0	0.2	0.0
54 Air transportation	0.1	0.0	0.1	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1
55 Transportation services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
56 Telephone, beeper, cellular	0.6	0.1	0.1	0.1	8.1	0.3	0.3	0.2	0.3	0.0	0.1	0.3
57 Cable TV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58 Radio and TV broadcasting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59 Other communications	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60 Electricity	0.4	0.1	0.1	0.2	2.0	0.4	0.1	0.2	0.4	0.0	0.2	0.1
61 Gas production & distribution	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.2	0.0	0.0
62 Water & sanitary services	0.1	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.3	0.0	0.0	0.0
63 Wholesale trade	5.4	2.0	1.4	0.9	18.4	4.4	2.0	0.7	2.9	0.0	1.8	1.7
64 Eating and drinking	0.3	0.1	0.1	0.1	5.5	0.2	0.0	0.1	0.3	0.0	0.1	0.1
65 Building materials & gardening	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66 General merchandise stores	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
67 Food stores	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0
68 Automotive dealers & service stations	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
69 Apparel & accessory stores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70 Furniture and home furnishings stores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71 Misc. retail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
72 Banking and credit agencies	0.7	0.2	0.2	0.0	4.4	0.4	2.8	0.0	0.5	0.0	0.3	0.3
73 Security and commodity brokers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74 Insurance and insurance agencies	0.3	0.1	0.1	0.0	1.7	0.2	1.1	0.0	0.2	0.0	0.1	0.1
75 Owner-occupied dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 Real estate	0.8	0.1	0.1	0.1	4.4	0.3	0.5	0.2	0.5	0.0	0.2	0.3
77 Hotels and lodging places	0.2	0.0	0.0	0.0	1.9	0.2	0.0	0.0	0.0	0.0	0.1	0.0
78 Laundry, cleaning, and shoe repairs	0.2	0.0	0.0	0.0	0.8	0.1	0.0	0.0	0.1	0.0	0.0	0.0
79 Portrait photography	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80 Beauty and barber shops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81 Funeral services and crematories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82 Misc. personal services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83 Advertising	0.1	0.0	0.0	0.0	1.1	0.2	0.1	0.0	0.0	0.0	0.0	0.1
84 Photofinishing & commercial photography	0.9	0.0	0.0	0.1	19.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85 Services to buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86 Equipment rental and leasing	0.4	0.1	0.2	0.2	1.8	1.3	1.7	0.2	0.5	0.0	0.2	0.4
87 Employment services	0.2	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

	37	38	39	40	41	42	43	44	45	46	47	48
Industry	Apparel and textiles	Lumber and wood products	Furniture & fixtures	Paper & allied products	Printing & publishing	Chemicals and allied products	Petroleum refining & products	Rubber & plastic products	Stone, clay, glass, concrete products	Primary metals	Fabricated metal products	Machinery and appliances
88 Computer and data processing services	0.0	0.0	0.0	0.0	2.2	0.0	0.7	0.0	0.1	0.0	0.0	0.0
89 Security services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
90 Other business services	0.5	0.1	0.3	0.0	2.0	0.7	0.7	0.1	0.3	0.0	0.1	0.2
91 Auto rental and leasing	0.1	0.0	0.1	0.0	2.3	0.0	0.0	0.0	0.3	0.0	0.1	0.0
92 Auto repairs and services	0.1	0.0	0.1	0.0	1.0	0.0	0.0	1.0	0.2	0.0	0.0	0.0
93 Electric repair services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94 Misc. repair services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95 Motion pictures and video rental	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96 Theatrical services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97 Misc. amusement services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 Membership sports and recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99 Museums, zoos, and botanical gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Doctors and dentists	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101 Nursing and protective care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 Hospitals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 Other medical and health services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104 Legal services	0.1	0.0	0.1	0.0	2.3	0.2	0.2	0.0	0.1	0.0	0.1	0.1
105 Educational services	0.1	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0
106 Child day care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107 Residential care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108 Membership organizations	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109 Engineering and architectural services	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.1	0.0
110 Accounting, auditing , and bookkeeping	0.2	0.0	0.6	0.0	2.9	0.6	0.0	0.0	0.2	0.0	0.1	0.0
111 Management and consulting services	0.2	0.1	0.1	0.0	1.4	0.0	0.2	0.0	0.1	0.0	0.0	0.0
112 Research, development and testing	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
113 Other services	0.6	0.0	1.3	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114 State and local govt. enterprises	1.1	0.0	0.0	0.4	31.8	1.9	0.0	0.0	1.1	0.0	0.8	0.0
115 Fed govt. enterprises	0.1	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116 Federal govt: Military	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117 Federal govt. Nonmilitary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118 State and local government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	27.6	6.0	7.9	3.9	163.2	29.8	25.3	4.0	35.9	0.0	9.7	7.7
Value added	67.9	16.7	20.7	17.7	354.3	20.7	109.0	6.9	139.8	1.2	32.3	13.8
Labor income	48.3	14.1	15.5	10.0	230.4	18.2	36.5	5.3	112.9	1.2	18.9	10.8
Other value added	19.7	2.6	5.2	7.8	124.0	2.4	72.5	1.6	26.9	0.0	13.4	3.0
Imports	73.1	21.3	17.8	18.9	94.0	23.1	1,010.0	13.8	48.1	1.4	30.0	18.4
Total input	168.6	44.0	46.4	40.5	611.5	73.6	1,144.3	24.7	223.8	2.6	72.0	39.9
Wage & salary jobs	2,123.0	358.0	512.0	245.0	3,581.0	548.0	442.0	227.0	1,262.0	26.0	454.0	263.0
Total jobs	2,854.0	561.0	640.0	246.0	4,099.0	571.0	460.0	231.0	1,640.0	35.0	552.0	307.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	49	50	51	52	53	54	55	56	57	58	59	60
	Transport- ation equipment	Misc. manufacturing products	Local, interurban passenger transit	Motor freight transportation and warehousing	Water transport- ation	Air transport- ation	Transportation services	Telephone, beeper, and cellular	Cable TV	Radio and TV broadcasting	Other communica- tion	Electricity
45 Stone, clay, glass, concrete products	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46 Primary metals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47 Fabricated metal products	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48 Machinery and appliances	0.6	0.2	0.0	0.0	3.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0
49 Transportation equipment	0.2	0.0	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50 Misc. manufacturing products	0.0	0.3	0.0	0.0	0.5	0.1	0.3	0.2	0.0	0.0	0.0	0.0
51 Taxis, limousines, buses	0.0	0.1	4.8	1.2	0.2	0.6	1.4	0.5	0.0	0.0	0.0	0.1
52 Motor freight transportation & warehousing	0.3	0.4	1.6	80.3	2.2	5.8	1.3	1.0	0.1	0.0	0.0	1.4
53 Water transportation	0.1	0.1	0.8	2.3	141.1	1.3	0.3	0.2	0.0	0.1	0.0	5.1
54 Air transportation	0.0	0.1	0.0	0.2	0.4	9.7	2.6	0.2	0.0	0.1	0.0	0.2
55 Transportation services	0.0	0.0	0.0	6.9	23.1	60.6	3.5	0.0	0.0	0.0	0.0	0.0
56 Telephone, beeper, cellular	0.1	0.3	1.2	2.6	5.2	9.2	12.2	8.7	0.0	0.0	0.0	2.2
57 Cable TV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0
58 Radio and TV broadcasting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.5	0.0	0.0
59 Other communications	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.7	0.0
60 Electricity	0.3	0.1	1.0	0.8	2.8	0.7	1.7	15.5	0.8	0.2	0.5	11.2
61 Gas production & distribution	0.0	0.0	0.2	0.0	0.3	0.1	0.3	0.3	0.0	0.0	0.0	0.0
62 Water & sanitary services	0.1	0.0	0.5	0.0	0.3	0.2	2.6	0.7	0.0	0.0	0.0	0.3
63 Wholesale trade	1.6	2.5	11.2	10.6	7.0	10.2	1.6	1.9	0.1	0.0	0.1	4.8
64 Eating and drinking	0.1	0.2	0.3	0.7	0.7	6.5	4.8	1.2	0.1	0.0	0.0	0.2
65 Building materials & gardening	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66 General merchandise stores	0.0	0.0	1.1	1.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
67 Food stores	0.0	0.0	1.3	1.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
68 Automotive dealers & service stations	0.0	0.0	0.9	0.9	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
69 Apparel & accessory stores	0.0	0.0	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70 Furniture and home furnishings stores	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71 Misc. retail	0.0	0.0	1.9	1.9	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0
72 Banking and credit agencies	0.0	0.2	4.4	2.8	31.2	3.2	11.4	4.7	0.2	0.3	0.1	1.2
73 Security and commodity brokers	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.3
74 Insurance and insurance agencies	0.1	0.1	3.1	2.8	3.3	0.5	5.4	0.1	0.0	0.0	0.0	0.7
75 Owner-occupied dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 Real estate	0.8	0.3	2.7	3.7	7.1	5.2	20.7	4.6	0.3	0.8	0.2	0.6
77 Hotels and lodging places	0.0	0.0	0.0	0.2	0.2	0.1	0.2	0.2	0.0	0.0	0.0	0.2
78 Laundry, cleaning, and shoe repairs	0.0	0.0	0.1	0.2	1.9	0.6	0.0	0.4	0.0	0.0	0.0	0.1
79 Portrait photography	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
80 Beauty and barber shops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81 Funeral services and crematories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82 Misc. personal services	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0
83 Advertising	0.0	0.0	0.2	0.2	0.8	1.1	2.1	0.6	0.0	0.0	0.0	0.0
84 Photofinishing & commercial photography	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85 Services to buildings	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
86 Equipment rental and leasing	0.2	0.5	0.4	1.8	8.6	6.6	3.9	0.0	0.0	0.0	0.0	0.0
87 Employment services	0.0	0.1	0.8	1.3	1.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	49	50	51	52	53	54	55	56	57	58	59	60
	Transport- ation equipment	Misc. manufacturing products	Local, interurban passenger transit	Motor freight transportation and warehousing	Water transport- ation	Air transport- ation	Transportation services	Telephone, beeper, and cellular	Cable TV	Radio and TV broadcasting	Other communica- tion	Electricity
88 Computer and data processing services	0.0	0.0	0.3	0.5	2.9	1.8	7.0	1.9	0.0	0.0	0.0	0.8
89 Security services	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90 Other business services	0.1	0.3	0.2	0.7	3.0	3.3	4.3	1.0	0.0	0.0	0.0	0.1
91 Auto rental and leasing	0.1	0.1	0.8	5.2	0.5	0.4	1.5	0.4	0.0	0.0	0.0	0.4
92 Auto repairs and services	0.0	0.0	5.6	16.5	0.1	0.2	0.0	0.3	0.0	0.0	0.0	0.1
93 Electric repair services	0.0	0.0	0.2	0.0	0.2	0.3	0.0	0.1	0.0	0.0	0.0	0.1
94 Misc. repair services	0.0	0.0	0.5	0.0	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
95 Motion pictures and video rental	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.0	1.5	0.0	0.0
96 Theatrical services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
97 Misc. amusement services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 Membership sports and recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
99 Museums, zoos, and botanical gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Doctors and dentists	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101 Nursing and protective care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 Hospitals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 Other medical and health services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104 Legal services	0.2	0.1	1.4	0.3	0.6	2.3	5.8	0.4	0.0	0.1	0.0	0.4
105 Educational services	0.0	0.1	0.0	0.0	0.0	1.2	1.9	0.5	0.0	0.1	0.0	0.4
106 Child day care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107 Residential care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108 Membership organizations	0.0	0.0	0.0	0.1	0.3	0.1	0.3	0.0	0.0	0.0	0.0	0.0
109 Engineering and architectural services	0.1	0.1	4.7	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.6
110 Accounting, auditing, and bookkeeping	0.0	0.0	0.5	0.5	0.2	1.9	2.2	1.4	0.0	0.1	0.0	0.7
111 Management and consulting services	0.0	0.0	0.8	2.4	2.0	1.8	1.3	0.6	0.0	0.0	0.0	0.4
112 Research, development and testing	0.1	0.0	0.1	0.6	0.2	0.1	0.6	0.3	0.0	0.0	0.0	0.1
113 Other services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114 State and local govt. enterprises	0.0	0.0	5.4	5.4	4.6	0.0	7.3	7.5	0.0	0.7	0.0	9.3
115 Fed govt. enterprises	0.0	0.0	0.0	0.1	0.1	0.0	0.5	0.2	0.0	0.0	0.0	0.1
116 Federal govt: Military	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117 Federal govt. Nonmilitary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118 State and local government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	5.7	8.0	91.1	182.1	303.2	487.0	125.2	66.5	7.8	67.6	11.9	191.0
Value added	28.5	49.2	142.7	207.7	187.0	566.9	251.0	617.5	54.1	73.9	69.5	522.8
Labor income	21.0	25.8	120.7	157.6	141.9	535.7	176.2	241.5	21.2	47.0	27.2	172.8
Other value added	7.6	23.4	22.0	50.1	45.1	31.2	74.8	375.9	32.9	26.9	42.3	350.0
Imports	21.9	17.0	61.1	58.2	168.3	271.3	24.8	55.6	2.9	7.5	1.8	104.6
Total input	56.1	74.2	294.9	448.0	658.5	1,325.2	401.0	739.6	64.8	149.0	83.2	818.4
Wage & salary jobs	475.0	928.0	4,574.0	4,793.0	3,387.0	13,528.0	5,887.0	4,964.0	435.0	1,000.0	558.0	2,909.0
Total jobs	483.0	1,475.0	6,235.0	5,307.0	3,519.0	13,581.0	6,963.0	5,044.0	442.0	1,016.0	567.0	2,958.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	61	62	63	64	65	66	67	68	69	70	71	72
	Gas production & distribution	Water & sanitary services	Wholesale trade	Eating and drinking	Building materials & gardening	General merchandise stores	Food stores	Automotive dealers & service stations	Apparel & accessory stores	Furniture and home furnishings stores	Misc. retail	Banking and credit agencies
45 Stone, clay, glass, concrete products	0.0	0.0	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46 Primary metals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47 Fabricated metal products	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48 Machinery and appliances	0.0	0.0	2.3	3.4	0.0	0.4	0.0	0.0	0.4	0.2	0.1	0.0
49 Transportation equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50 Misc. manufacturing products	0.0	0.0	0.4	0.3	0.3	0.3	0.1	0.0	0.3	0.2	0.1	1.4
51 Taxis, limousines, buses	0.0	0.4	4.3	0.7	0.0	0.3	0.1	0.0	0.2	0.1	0.1	1.0
52 Motor freight transportation & warehousing	0.0	2.1	34.9	11.0	1.8	6.3	1.1	0.2	4.0	1.3	1.7	7.2
53 Water transportation	0.0	0.5	1.0	2.2	0.0	0.3	0.1	0.0	0.2	0.1	0.1	0.3
54 Air transportation	0.1	0.2	3.9	0.9	0.2	0.8	0.1	0.0	0.5	0.1	0.2	2.7
55 Transportation services	0.0	0.0	6.1	0.4	0.0	0.3	0.0	0.0	0.2	0.0	0.1	0.8
56 Telephone, beeper, cellular	0.1	1.0	39.1	6.6	3.0	16.7	2.9	1.0	9.5	3.3	6.0	40.2
57 Cable TV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58 Radio and TV broadcasting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59 Other communications	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60 Electricity	0.1	5.4	7.6	7.6	11.0	19.6	5.5	0.9	19.4	10.0	8.3	15.1
61 Gas production & distribution	0.0	0.3	2.0	0.7	0.3	0.6	0.2	0.0	0.5	0.3	0.3	1.6
62 Water & sanitary services	0.0	8.8	3.6	4.1	0.3	0.6	0.1	0.0	0.5	0.3	0.2	4.9
63 Wholesale trade	0.0	6.5	27.3	60.8	2.7	4.8	1.3	0.2	4.6	2.4	2.0	8.3
64 Eating and drinking	0.0	0.6	20.7	0.8	0.9	1.4	0.4	0.1	1.3	0.6	0.6	7.5
65 Building materials & gardening	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66 General merchandise stores	0.0	0.3	1.3	0.3	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.1
67 Food stores	0.0	0.4	1.4	0.3	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.2
68 Automotive dealers & service stations	0.0	0.2	0.6	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
69 Apparel & accessory stores	0.0	0.3	0.8	0.1	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.1
70 Furniture and home furnishings stores	0.0	0.2	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
71 Misc. retail	0.0	0.6	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.2
72 Banking and credit agencies	0.6	0.5	30.0	16.6	2.7	14.3	2.5	0.9	8.1	2.8	5.1	338.4
73 Security and commodity brokers	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.8
74 Insurance and insurance agencies	0.1	2.4	3.7	1.2	0.5	2.2	0.4	0.1	1.3	0.4	0.8	24.4
75 Owner-occupied dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 Real estate	0.4	2.3	23.4	19.6	6.2	32.9	5.7	2.1	18.3	6.5	11.8	26.3
77 Hotels and lodging places	0.0	0.8	3.0	0.1	0.0	0.4	0.1	0.0	0.2	0.1	0.2	2.0
78 Laundry, cleaning, and shoe repairs	0.0	0.2	0.4	1.7	0.3	0.8	0.1	0.0	0.5	0.2	0.3	0.8
79 Portrait photography	0.0	0.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80 Beauty and barber shops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81 Funeral services and crematories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82 Misc. personal services	0.0	0.0	15.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83 Advertising	0.0	0.0	3.4	1.4	3.2	16.2	3.5	0.8	7.9	2.6	1.7	2.0
84 Photofinishing & commercial photography	0.0	0.0	10.9	2.3	2.3	11.4	2.5	0.6	5.8	1.8	1.2	0.0
85 Services to buildings	0.0	0.0	4.5	0.6	0.6	1.6	0.3	0.1	0.7	0.3	0.2	4.0
86 Equipment rental and leasing	0.0	0.5	12.7	2.2	1.0	4.6	1.0	0.2	2.2	0.7	0.5	8.2
87 Employment services	0.0	0.2	9.9	8.5	2.5	12.2	2.6	0.6	5.9	1.9	1.3	6.4

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	61	62	63	64	65	66	67	68	69	70	71	72
	Gas production & distribution	Water & sanitary services	Wholesale trade	Eating and drinking	Building materials & gardening	General merchandise stores	Food stores	dealers & service stations	Apparel & accessory stores	Furniture and home furnishings stores	Misc. retail	Banking and credit agencies
88 Computer and data processing services	0.1	1.1	1.9	0.0	0.8	3.4	0.7	0.2	1.5	0.5	0.3	65.1
89 Security services	0.0	0.0	23.1	0.0	1.6	8.1	1.7	0.4	4.1	1.2	0.9	19.8
90 Other business services	0.0	0.3	20.4	7.0	0.2	1.3	0.3	0.1	0.7	0.1	0.1	3.0
91 Auto rental and leasing	0.0	0.0	10.9	0.5	0.7	3.7	0.6	0.2	1.9	0.7	1.3	5.0
92 Auto repairs and services	0.0	0.0	16.1	0.2	0.7	3.4	0.6	0.2	1.9	0.7	1.2	0.5
93 Electric repair services	0.0	0.6	2.2	0.3	0.0	0.5	0.1	0.0	0.2	0.1	0.2	0.8
94 Misc. repair services	0.0	0.0	1.7	0.2	0.0	0.3	0.0	0.0	0.2	0.0	0.1	0.0
95 Motion pictures and video rental	0.0	0.0	4.7	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96 Theatrical services	0.0	0.0	0.4	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
97 Misc. amusement services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 Membership sports and recreation	0.0	0.0	0.4	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.1
99 Museums, zoos, and botanical gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Doctors and dentists	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101 Nursing and protective care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 Hospitals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 Other medical and health services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104 Legal services	0.1	0.5	13.3	2.0	1.9	10.5	1.9	0.7	6.0	2.1	3.8	9.1
105 Educational services	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
106 Child day care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107 Residential care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108 Membership organizations	0.0	0.0	0.4	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.8
109 Engineering and architectural services	0.0	0.1	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110 Accounting, auditing, and bookkeeping	0.0	1.8	20.7	3.5	0.5	2.4	0.4	0.2	1.5	0.4	0.9	35.3
111 Management and consulting services	0.0	0.5	11.2	2.5	0.5	2.2	0.4	0.1	1.3	0.4	0.8	21.6
112 Research, development and testing	0.0	0.1	6.0	0.8	0.2	0.8	0.1	0.0	0.5	0.1	0.3	7.8
113 Other services	0.0	2.5	10.0	10.2	0.8	4.4	0.8	0.3	2.5	0.9	1.6	2.1
114 State and local govt. enterprises	2.0	14.0	43.2	11.4	5.5	28.5	5.0	1.8	16.1	5.6	10.2	19.2
115 Fed govt. enterprises	0.0	0.2	1.0	0.2	0.3	0.8	0.1	0.0	0.5	0.1	0.3	12.1
116 Federal govt: Military	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117 Federal govt. Nonmilitary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118 State and local government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	21.2	79.3	519.8	307.7	71.7	263.9	53.5	13.4	169.5	63.7	73.7	788.6
Value added	12.7	31.5	1,315.0	1,133.8	94.1	337.5	456.6	414.5	251.2	151.6	904.7	1,106.3
Labor income	3.9	27.9	786.2	742.4	60.1	215.5	291.6	264.7	160.4	96.8	577.7	595.4
Other value added	8.8	3.6	528.7	391.5	34.0	122.0	165.1	149.9	90.8	54.8	327.0	510.9
Imports	11.5	36.8	58.7	688.2	2.1	12.3	15.7	12.5	12.6	5.1	41.9	333.3
Total input	45.4	147.6	1,893.5	2,129.7	167.9	613.7	525.8	440.4	433.3	220.4	1,020.3	2,228.2
Wage & salary jobs	45.0	474.0	22,752.0	48,613.0	2,224.0	12,500.0	14,914.0	9,633.0	9,263.0	3,891.0	16,233.0	15,534.0
Total jobs	46.0	482.0	26,860.0	49,693.0	2,480.0	12,702.0	15,673.0	9,977.0	10,198.0	4,301.0	29,099.0	23,213.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	73	74	75	76	77	78	79	80	81	82	83	84
	Security and commodity brokers	Insurance and insurance agencies	Owner-occupied dwellings	Real estate	Hotels and lodging places	Laundry, cleaning, and shoe repairs	Portrait photography	Beauty and barber shops	Funeral services and crematories	Misc. personal services	Advertising	Photofinishing and commercial photography
1 Sugar crops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 Vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 Tree nuts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 Pineapple	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 Other fruits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 Coffee	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Greenhouse and nursery products	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 Dairy farm products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 Poultry and eggs	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 Cattle and calves	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11 Hogs, pigs, & swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 Misc. livestock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 Aquaculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 Forestry and forest products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 Other agricultural products	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 Agricultural, forestry, and fishery services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 Landscape and horticultural services	0.0	0.0	61.5	28.0	24.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 Mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 Single family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 Multiple family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 New industrial & commercial buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 Hotel construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 Road construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 Other construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 Maintenance & repairs	0.3	0.9	104.0	97.6	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
27 Pineapple processing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 Other canned and frozen fruits & vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29 Sugar processing	0.0	0.1	0.0	2.8	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 Confectionery products	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 Salted & roasted nuts and seeds	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32 Meat products	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33 Milk products	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34 Grain & bakery products	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35 Beverages	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36 Other food and tobacco products	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37 Apparel and textiles	0.0	0.0	0.0	0.0	5.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
38 Lumber and wood products	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39 Furniture & fixtures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40 Paper & allied products	0.0	0.5	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41 Printing & publishing	0.9	15.4	0.0	23.3	33.3	0.0	0.1	0.0	0.1	0.0	0.2	3.0
42 Chemicals and allied products	0.0	0.0	1.1	1.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
43 Petroleum refining & products	0.0	1.8	0.0	5.2	14.4	0.0	0.0	0.0	0.0	0.1	0.0	0.2
44 Rubber & plastic products	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	73	74	75	76	77	78	79	80	81	82	83	84
	Security and commodity brokers	Insurance and insurance agencies	Owner- occupied dwellings	Real estate	Hotels and lodging places	Laundry, cleaning, and shoe repairs	Portrait photography	Beauty and barber shops	Funeral services and crematories	Misc. personal services	Advertising	Photofinishing and commercial photography
45 Stone, clay, glass, concrete products	0.0	0.0	0.0	0.8	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46 Primary metals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47 Fabricated metal products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48 Machinery and appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
49 Transportation equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50 Misc. manufacturing products	0.0	0.2	0.0	0.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51 Taxies, limousines, buses	0.0	0.5	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2
52 Motor freight transportation & warehousing	0.0	3.6	0.0	3.7	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1
53 Water transportation	0.0	0.2	0.0	0.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54 Air transportation	0.6	1.4	0.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1
55 Transportation services	0.0	0.4	0.0	2.2	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1
56 Telephone, beeper, cellular	13.6	23.5	0.0	17.9	40.0	0.0	0.1	0.0	0.0	0.1	0.1	1.0
57 Cable TV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58 Radio and TV broadcasting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	0.0
59 Other communications	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60 Electricity	0.0	1.3	0.0	89.6	54.4	0.1	0.0	0.1	0.0	0.1	0.0	0.5
61 Gas production & distribution	0.0	0.1	0.0	4.7	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62 Water & sanitary services	0.4	2.3	0.0	32.4	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2
63 Wholesale trade	0.6	2.7	4.7	3.7	19.6	0.3	0.2	0.3	0.3	0.3	0.0	0.4
64 Eating and drinking	0.0	6.2	0.0	5.2	7.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
65 Building materials & gardening	0.0	0.0	0.8	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66 General merchandise stores	0.0	0.0	3.0	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1
67 Food stores	0.0	0.1	3.8	1.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1
68 Automotive dealers & service stations	0.0	0.1	1.3	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.2
69 Apparel & accessory stores	0.0	0.0	2.8	1.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70 Furniture and home furnishings stores	0.0	0.0	2.4	1.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71 Misc. retail	0.0	0.1	5.1	2.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2
72 Banking and credit agencies	2.4	75.9	32.2	49.2	107.7	0.1	0.2	0.0	0.0	0.0	0.1	1.9
73 Security and commodity brokers	2.5	7.7	0.0	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74 Insurance and insurance agencies	0.0	168.5	102.6	38.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3
75 Owner-occupied dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 Real estate	1.6	16.2	134.7	182.0	67.3	0.2	0.1	0.1	0.1	0.2	0.2	1.7
77 Hotels and lodging places	0.2	2.5	0.0	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.2
78 Laundry, cleaning, and shoe repairs	0.0	0.4	0.0	0.5	7.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0
79 Portrait photography	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80 Beauty and barber shops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81 Funeral services and crematories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82 Misc. personal services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83 Advertising	0.1	0.3	0.0	0.9	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1
84 Photofinishing & commercial photography	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.1	0.0	10.2
85 Services to buildings	0.2	0.5	28.7	50.1	43.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86 Equipment rental and leasing	0.4	1.1	0.0	0.0	20.1	0.0	0.0	0.0	0.0	0.1	0.0	0.4
87 Employment services	0.3	0.8	0.0	0.0	15.7	0.0	0.0	0.0	0.0	0.0	0.0	0.1

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	73	74	75	76	77	78	79	80	81	82	83	84
	Security and commodity brokers	Insurance and insurance agencies	Owner- occupied dwellings	Real estate	Hotels and lodging places	Laundry, cleaning, and shoe repairs	Portrait photography	Beauty and barber shops	Funeral services and crematories	Misc. personal services	Advertising	Photofinishing and commercial photography
88 Computer and data processing services	3.2	8.8	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1
89 Security services	0.9	2.7	0.0	0.0	21.9	0.0	0.0	0.0	0.0	0.1	0.0	0.0
90 Other business services	0.2	0.4	19.4	8.6	10.8	0.0	0.1	0.0	0.0	0.0	0.0	0.6
91 Auto rental and leasing	0.0	2.5	0.0	2.2	7.7	0.1	0.0	0.0	0.1	0.0	0.0	0.3
92 Auto repairs and services	0.0	0.3	0.0	0.2	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 Electric repair services	0.0	0.2	0.0	0.3	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94 Misc. repair services	0.0	0.0	0.6	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1
95 Motion pictures and video rental	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96 Theatrical services	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
97 Misc. amusement services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 Membership sports and recreation	0.0	0.1	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99 Museums, zoos, and botanical gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Doctors and dentists	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101 Nursing and protective care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 Hospitals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 Other medical and health services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104 Legal services	0.6	7.8	19.2	14.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2
105 Educational services	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106 Child day care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107 Residential care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108 Membership organizations	0.0	0.0	0.0	0.5	2.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1
109 Engineering and architectural services	0.0	0.0	4.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110 Accounting, auditing, and bookkeeping	1.5	11.6	0.0	4.0	7.6	0.0	0.1	0.0	0.0	0.4	0.0	4.8
111 Management and consulting services	0.0	4.1	0.0	4.1	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2
112 Research, development and testing	0.0	2.0	0.0	1.2	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1
113 Other services	0.0	1.5	0.0	2.4	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114 State and local govt. enterprises	0.0	8.7	0.0	0.0	99.5	0.5	0.5	0.0	0.0	0.0	0.1	1.7
115 Fed govt. enterprises	0.2	1.4	0.6	0.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.5
116 Federal govt: Military	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117 Federal govt. Nonmilitary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118 State and local government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	30.7	387.4	532.6	689.1	731.8	1.5	2.2	0.5	0.6	1.8	16.8	31.6
Value added	44.0	465.0	714.2	3,394.4	1,210.3	89.1	12.1	63.4	12.8	56.8	49.4	58.5
Labor income	43.4	334.4	0.0	954.4	670.8	82.9	10.2	54.3	9.7	55.0	40.7	39.5
Other value added	0.6	130.6	714.2	2,440.0	539.5	6.2	1.9	9.2	3.2	1.7	8.7	19.0
Imports	17.1	77.6	11.2	102.5	320.1	1.5	1.7	1.0	1.5	2.8	0.3	16.1
Total input	91.8	930.0	1,258.0	4,186.0	2,262.2	92.1	16.0	64.9	14.9	61.4	66.5	106.2
Wage & salary jobs	557.0	8,177.0	0.0	15,840.0	43,290.0	2,734.0	391.0	2,059.0	350.0	4,139.0	677.0	1,416.0
Total jobs	855.0	10,876.0	0.0	30,115.0	43,905.0	5,552.0	794.0	4,180.0	711.0	5,135.0	1,115.0	2,333.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	85	86	87	88	89	90	91	92	93	94	95	96
	Services to buildings	Equipment rental and leasing	Employment services	Computer and data processing services	Security services	Other business services	Auto rental and leasing	Auto repairs and services	Electric repair services	Misc. repair services	Motion pictures	Theatrical services
1 Sugar crops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 Vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 Tree nuts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 Pineapple	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 Other fruits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 Coffee	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Greenhouse and nursery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 Dairy farm products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 Poultry and eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 Cattle and calves	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11 Hogs, pigs, & swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 Misc. livestock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 Aquaculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 Forestry and forest products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 Other agricultural products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 Agricultural, forestry, and fishery services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 Landscape and horticultural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 Mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 Single family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 Multiple family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 New industrial & commercial buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 Hotel construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 Road construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 Other construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 Maintenance & repairs	0.3	0.1	0.1	0.1	0.1	0.3	0.2	0.9	0.1	0.3	0.1	0.5
27 Pineapple processing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 Other canned and frozen fruits & vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29 Sugar processing	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
30 Confectionery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 Salted & roasted nuts and seeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32 Meat products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33 Milk products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34 Grain & bakery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35 Beverages	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36 Other food and tobacco products	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
37 Apparel and textiles	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.0
38 Lumber and wood products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39 Furniture & fixtures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40 Paper & allied products	0.0	0.1	0.1	0.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
41 Printing & publishing	0.0	0.0	0.0	0.0	0.4	6.1	0.6	1.5	0.2	0.2	0.6	2.2
42 Chemicals and allied products	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
43 Petroleum refining & products	0.9	0.3	0.2	0.4	0.3	1.0	12.8	0.9	0.2	0.2	0.0	0.0
44 Rubber & plastic products	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	1992 Hawaii State Input-Output Table (in \$ million) (cont.)											
	85	86	87	88	89	90	91	92	93	94	95	96
	Services to buildings	Equipment rental and leasing	Employment services	Computer and data processing services	Security services	Other business services	Auto rental and leasing	Auto repairs and services	Electric repair services	Misc. repair services	Motion pictures	Theatrical services
45 Stone, clay, glass, concrete products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46 Primary metals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47 Fabricated metal products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48 Machinery and appliances	0.0	0.0	0.0	0.0	0.0	1.0	0.8	1.7	0.4	6.0	0.0	0.0
49 Transportation equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
50 Misc. manufacturing products	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
51 Taxies, limousines, buses	0.2	0.4	0.2	0.4	0.1	0.4	0.3	0.1	0.0	0.0	0.1	0.0
52 Motor freight transportation & warehousing	1.2	0.3	0.2	0.6	0.0	0.9	3.4	1.3	0.1	0.1	0.4	0.0
53 Water transportation	0.0	0.0	0.0	0.0	0.0	0.3	2.2	0.9	0.1	0.1	0.1	0.0
54 Air transportation	0.1	0.3	0.1	0.4	0.1	0.7	0.7	0.2	0.0	0.0	0.0	0.0
55 Transportation services	0.0	0.0	0.0	0.3	0.0	0.7	1.7	0.7	0.0	0.0	0.0	0.0
56 Telephone, beeper, cellular	1.8	1.7	1.3	3.4	1.1	3.2	2.5	2.6	0.6	0.5	1.0	1.0
57 Cable TV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58 Radio and TV broadcasting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59 Other communications	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60 Electricity	0.1	0.7	0.1	0.8	0.1	0.7	0.7	1.1	0.3	0.4	0.3	0.3
61 Gas production & distribution	0.2	0.1	0.0	0.0	0.0	0.2	0.9	0.3	0.0	0.0	0.0	0.0
62 Water & sanitary services	0.5	0.3	0.1	0.3	0.1	0.4	1.2	0.5	0.0	0.0	0.0	0.0
63 Wholesale trade	1.2	0.8	0.2	1.5	0.0	1.3	13.9	15.9	1.1	1.9	0.1	0.5
64 Eating and drinking	0.4	0.1	0.2	1.2	0.1	2.4	0.9	0.3	0.0	0.0	0.0	0.0
65 Building materials & gardening	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.0	0.0	0.0	0.0
66 General merchandise stores	0.3	0.0	0.0	0.3	0.0	0.1	0.9	2.6	0.0	0.0	0.0	0.0
67 Food stores	0.2	0.0	0.0	0.2	0.0	0.1	1.1	2.8	0.0	0.0	0.0	0.0
68 Automotive dealers & service stations	0.2	0.0	0.0	0.2	0.0	0.2	0.8	2.0	0.0	0.0	0.0	0.0
69 Apparel & accessory stores	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.7	0.0	0.0	0.0	0.0
70 Furniture and home furnishings stores	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.4	0.0	0.0	0.0	0.0
71 Misc. retail	0.3	0.0	0.0	0.3	0.0	0.2	1.8	4.2	0.0	0.0	0.0	0.0
72 Banking and credit agencies	1.4	5.3	1.6	4.0	0.0	2.6	14.0	0.7	0.0	0.2	0.5	1.3
73 Security and commodity brokers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74 Insurance and insurance agencies	0.4	0.5	0.1	0.4	0.0	0.1	3.1	0.1	0.0	0.1	0.1	0.1
75 Owner-occupied dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 Real estate	1.3	2.3	1.2	3.7	1.0	2.9	1.1	4.3	0.5	0.5	0.5	0.6
77 Hotels and lodging places	0.2	0.4	0.1	0.4	1.0	0.5	0.2	0.1	0.0	0.0	0.1	0.1
78 Laundry, cleaning, and shoe repairs	0.1	0.2	0.1	0.0	0.0	0.3	0.1	0.4	0.0	0.0	0.0	0.0
79 Portrait photography	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80 Beauty and barber shops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81 Funeral services and crematories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82 Misc. personal services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83 Advertising	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.4	0.0	0.1	0.0	0.0
84 Photofinishing & commercial photography	0.0	0.0	0.0	0.0	0.5	1.1	0.0	0.0	0.0	0.0	0.1	0.2
85 Services to buildings	0.8	0.3	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
86 Equipment rental and leasing	0.9	0.4	0.6	1.1	0.8	0.9	0.0	0.0	0.0	0.0	0.1	0.2
87 Employment services	4.3	2.4	0.2	0.0	0.2	2.1	0.4	3.5	0.2	0.4	0.1	0.3

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	85	86	87	88	89	90	91	92	93	94	95	96
	Services to buildings	Equipment rental and leasing	Employment services	Computer and data processing services	Security services	Other business services	Auto rental and leasing	Auto repairs and services	Electric repair services	Misc. repair services	Motion pictures	Theatrical services
88 Computer and data processing services	4.1	0.0	6.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
89 Security services	1.1	0.0	0.0	1.4	10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.9
90 Other business services	0.8	0.2	0.3	1.4	0.0	1.5	0.3	2.6	0.2	0.3	0.2	0.4
91 Auto rental and leasing	1.1	0.4	0.0	0.7	0.1	1.0	0.0	0.2	0.0	0.2	0.2	0.0
92 Auto repairs and services	0.6	0.1	0.1	0.2	0.0	0.1	3.1	0.1	0.0	0.1	0.1	0.9
93 Electric repair services	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94 Misc. repair services	0.2	1.3	0.0	0.5	0.0	0.3	0.5	0.1	0.0	0.1	0.1	0.0
95 Motion pictures and video rental	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.7	0.0
96 Theatrical services	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
97 Misc. amusement services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 Membership sports and recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99 Museums, zoos, and botanical gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Doctors and dentists	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101 Nursing and protective care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 Hospitals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 Other medical and health services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104 Legal services	0.1	0.1	0.3	0.3	0.1	0.4	0.7	0.6	0.1	0.1	0.1	0.2
105 Educational services	2.9	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106 Child day care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107 Residential care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108 Membership organizations	0.0	0.1	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2
109 Engineering and architectural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110 Accounting, auditing, and bookkeeping	0.3	1.1	0.3	0.3	0.0	1.2	1.9	0.4	0.1	0.2	0.0	5.8
111 Management and consulting services	0.2	0.3	0.3	0.3	0.0	0.5	1.5	0.3	0.1	0.1	0.1	0.1
112 Research, development and testing	0.1	0.1	0.1	0.1	0.0	0.2	0.6	0.1	0.0	0.0	0.0	0.0
113 Other services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114 State and local govt. enterprises	2.8	3.7	2.6	0.0	0.0	4.2	2.7	0.0	0.0	0.0	0.0	0.0
115 Fed govt. enterprises	0.2	0.6	0.2	0.2	0.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0
116 Federal govt: Military	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117 Federal govt. Nonmilitary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118 State and local government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	31.9	25.1	17.3	27.5	16.3	42.8	78.9	58.2	4.3	12.5	15.1	16.3
Value added	137.3	93.8	149.3	115.6	126.4	142.8	180.3	130.7	38.8	46.8	57.1	53.7
Labor income	122.2	60.0	143.5	98.5	116.1	96.1	101.4	70.6	29.5	39.5	44.2	45.9
Other value added	15.1	33.8	5.8	17.1	10.3	46.6	78.9	60.1	9.3	7.3	12.9	7.8
Imports	17.0	21.1	4.2	33.0	3.3	22.2	73.2	78.2	10.2	12.3	10.5	7.2
Total input	186.2	140.0	170.8	176.1	146.0	207.8	332.4	267.1	53.3	71.6	82.7	77.2
Wage & salary jobs	4,173.0	1,065.0	4,710.0	1,567.0	4,014.0	2,860.0	2,816.0	3,731.0	682.0	899.0	2,347.0	1,428.0
Total jobs	6,875.0	1,755.0	7,760.0	2,581.0	6,612.0	4,712.0	3,142.0	5,033.0	1,203.0	1,585.0	2,831.0	2,132.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	97	98	99	100	101	102	103	104	105	106	107	108
	Misc. amusement services	Membership sports and recreation	Museums, zoos, and botanical gardens	Doctors and dentists	Nursing and protective care	Hospitals	Other medical and health services	Legal services	Educational services	Child day care services	Residential care	Membership organizations
1 Sugar crops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 Vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 Tree nuts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 Pineapple	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 Other fruits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 Coffee	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Greenhouse and nursery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
8 Dairy farm products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 Poultry and eggs	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
10 Cattle and calves	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11 Hogs, pigs, & swine	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 Misc. livestock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 Aquaculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 Forestry and forest products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 Other agricultural products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 Agricultural, forestry, and fishery services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 Landscape and horticultural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 Mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 Single family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 Multiple family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 New industrial & commercial buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 Hotel construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 Road construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 Other construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 Maintenance & repairs	4.2	0.3	0.5	3.1	4.3	7.1	1.4	0.1	1.3	0.1	0.6	8.1
27 Pineapple processing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 Other canned and frozen fruits & vegetables	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
29 Sugar processing	0.1	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0
30 Confectionery products	0.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
31 Salted & roasted nuts and seeds	0.1	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0
32 Meat products	0.3	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0
33 Milk products	0.3	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
34 Grain & bakery products	0.5	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
35 Beverages	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36 Other food and tobacco products	0.2	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
37 Apparel and textiles	0.7	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.4
38 Lumber and wood products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39 Furniture & fixtures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40 Paper & allied products	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.2	0.0	0.0	0.1	0.3
41 Printing & publishing	2.3	0.5	0.6	14.7	3.6	26.5	3.7	2.9	2.9	0.3	3.6	7.7
42 Chemicals and allied products	0.0	0.0	0.0	0.0	0.0	16.3	3.4	0.0	0.0	0.0	0.0	0.0
43 Petroleum refining & products	1.9	0.0	0.0	4.8	0.9	9.9	2.4	0.2	0.4	0.1	0.6	1.0
44 Rubber & plastic products	0.4	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	97	98	99	100	101	102	103	104	105	106	107	108
	Misc. amusement services	Membership sports and recreation	Museums, zoos, and botanical gardens	Doctors and dentists	Nursing and protective care	Hospitals	Other medical and health services	Legal services	Educational services	Child day care services	Residential care	Membership organizations
45 Stone, clay, glass, concrete products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46 Primary metals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47 Fabricated metal products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48 Machinery and appliances	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0
49 Transportation equipment	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50 Misc. manufacturing products	0.2	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
51 Taxies, limousines, buses	1.0	0.0	0.3	2.2	2.3	4.4	1.1	0.6	0.3	0.0	0.0	0.7
52 Motor freight transportation & warehousing	3.2	0.0	0.6	0.0	0.0	8.5	2.8	1.5	0.4	0.1	0.0	2.4
53 Water transportation	0.7	0.0	0.1	0.0	0.0	4.2	1.2	0.0	0.1	0.0	0.0	0.6
54 Air transportation	0.2	0.0	0.0	1.2	1.0	0.8	0.2	1.6	0.3	0.0	0.0	0.5
55 Transportation services	0.0	0.0	0.0	0.9	0.0	1.5	0.0	0.3	0.0	0.0	0.0	0.0
56 Telephone, beeper, cellular	1.3	0.6	0.0	18.9	4.2	19.8	3.0	5.5	1.3	0.2	0.9	6.4
57 Cable TV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58 Radio and TV broadcasting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59 Other communications	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60 Electricity	1.7	0.8	0.4	4.3	4.5	17.5	1.1	0.6	0.7	0.1	0.0	2.5
61 Gas production & distribution	0.5	0.0	0.1	0.2	0.5	4.3	0.1	0.1	0.1	0.0	0.0	0.6
62 Water & sanitary services	2.0	0.0	0.0	1.1	0.6	2.4	0.3	0.6	0.2	0.0	0.0	2.2
63 Wholesale trade	4.6	0.1	0.8	10.3	2.6	41.2	7.1	2.4	0.9	0.3	0.0	5.1
64 Eating and drinking	3.0	0.0	0.0	2.3	4.0	11.3	1.0	1.9	0.6	0.2	0.0	2.1
65 Building materials & gardening	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66 General merchandise stores	0.4	0.0	0.0	0.5	0.0	0.8	0.0	0.3	0.1	0.0	0.0	0.1
67 Food stores	0.3	0.0	0.0	0.3	0.0	0.5	0.0	0.2	0.0	0.0	0.0	0.3
68 Automotive dealers & service stations	0.3	0.0	0.0	0.4	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.2
69 Apparel & accessory stores	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70 Furniture and home furnishings stores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71 Misc. retail	0.5	0.0	0.0	1.0	0.0	1.6	0.0	0.3	0.1	0.0	0.0	0.3
72 Banking and credit agencies	8.1	0.2	0.8	9.0	1.3	2.0	0.6	2.3	0.3	0.0	0.0	0.7
73 Security and commodity brokers	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
74 Insurance and insurance agencies	0.5	0.0	0.2	6.0	0.5	2.2	0.2	0.8	0.1	0.0	0.0	3.1
75 Owner-occupied dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 Real estate	10.7	0.2	0.8	29.6	8.4	117.5	7.8	12.0	2.0	0.3	2.2	28.3
77 Hotels and lodging places	0.2	0.0	0.2	1.6	0.3	1.6	0.2	3.4	0.1	0.0	0.0	3.2
78 Laundry, cleaning, and shoe repairs	1.4	0.0	0.0	1.0	1.1	3.4	0.5	0.0	0.1	0.0	0.0	0.8
79 Portrait photography	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80 Beauty and barber shops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81 Funeral services and crematories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82 Misc. personal services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83 Advertising	0.7	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84 Photofinishing & commercial photography	3.5	0.1	0.1	0.0	0.0	1.8	0.0	0.0	1.2	0.1	0.0	0.0
85 Services to buildings	1.4	0.0	0.1	1.6	0.0	1.4	0.0	0.4	0.8	0.0	0.0	0.0
86 Equipment rental and leasing	4.0	0.1	0.2	3.1	0.0	3.0	0.6	0.0	0.0	0.0	0.0	1.9
87 Employment services	4.7	0.1	0.2	3.9	1.0	9.7	1.2	1.3	1.4	0.1	0.0	4.9

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	97	98	99	100	101	102	103	104	105	106	107	108
	Misc. amusement services	Membership sports and recreation	Museums, zoos, and botanical gardens	Doctors and dentists	Nursing and protective care	Hospitals	Other medical and health services	Legal services	Educational services	Child day care services	Residential care	Membership organizations
88 Computer and data processing services	0.6	0.0	0.0	11.0	0.0	6.7	0.6	0.2	0.5	0.1	0.0	1.8
89 Security services	14.7	0.4	0.7	0.0	0.0	7.4	0.0	13.0	0.0	0.0	0.0	0.0
90 Other business services	6.6	0.2	0.3	9.7	0.0	13.8	2.3	0.3	1.0	0.0	0.0	1.2
91 Auto rental and leasing	0.6	0.0	0.4	4.6	0.6	4.6	0.6	1.7	0.7	0.0	0.0	2.7
92 Auto repairs and services	0.7	0.0	0.1	0.3	0.5	0.9	0.1	2.4	0.2	0.0	0.0	1.5
93 Electric repair services	1.1	0.0	0.0	0.0	0.0	1.3	0.0	0.2	0.0	0.0	0.0	0.1
94 Misc. repair services	1.1	0.0	0.1	0.5	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2
95 Motion pictures and video rental	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	1.9	0.2	0.0	0.7
96 Theatrical services	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97 Misc. amusement services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 Membership sports and recreation	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
99 Museums, zoos, and botanical gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Doctors and dentists	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101 Nursing and protective care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 Hospitals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 Other medical and health services	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104 Legal services	1.3	0.2	0.1	1.2	0.3	1.9	0.5	0.0	0.2	0.0	0.0	0.7
105 Educational services	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.5	0.0	0.0	0.0
106 Child day care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107 Residential care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108 Membership organizations	0.8	0.1	0.0	1.3	0.2	0.4	0.1	0.4	0.3	0.0	0.0	0.0
109 Engineering and architectural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110 Accounting, auditing, and bookkeeping	1.1	0.3	0.3	2.2	0.0	1.8	0.6	0.9	0.3	0.1	0.0	1.7
111 Management and consulting services	1.7	0.1	0.2	1.0	0.5	2.1	0.5	4.9	0.3	0.0	0.0	0.7
112 Research, development and testing	0.7	0.0	0.1	0.3	0.0	0.8	0.2	1.9	0.1	0.0	0.0	0.3
113 Other services	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
114 State and local govt. enterprises	3.9	0.0	1.2	17.2	0.0	19.0	2.8	3.4	1.1	0.3	0.0	39.2
115 Fed govt. enterprises	0.1	0.0	0.0	1.9	0.0	0.6	0.1	1.2	0.1	0.1	0.0	1.0
116 Federal govt: Military	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117 Federal govt. Nonmilitary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118 State and local government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	103.8	4.3	10.0	176.3	43.2	420.0	50.8	70.1	23.2	2.7	8.0	136.5
Value added	238.6	28.5	21.7	755.9	86.2	664.1	138.4	395.7	235.2	26.6	35.4	180.1
Labor income	174.8	22.6	19.2	676.0	82.4	599.2	113.6	375.5	218.6	25.0	33.2	162.6
Other value added	63.9	6.0	2.5	79.9	3.8	65.0	24.8	20.2	16.6	1.6	2.1	17.5
Imports	30.1	1.2	5.2	112.9	19.0	249.1	40.7	18.6	89.6	3.3	0.0	38.3
Total input	372.5	34.0	36.9	1,045.1	148.4	1,333.2	229.9	484.4	348.0	32.6	43.4	354.9
Wage & salary jobs	6,799.0	1,754.0	980.0	12,650.0	2,715.0	14,026.0	4,171.0	5,023.0	9,647.0	2,340.0	838.0	7,261.0
Total jobs	10,152.0	2,618.0	980.0	14,816.0	3,798.0	14,026.0	5,253.0	6,189.0	13,761.0	2,340.0	838.0	7,261.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	109	110	111	112	113	114	115	116	117	118
	Engineering and architectural services	Accounting, auditing, and bookkeeping	Management and consulting services	Research, development and testing	Other services	State and local gov't. enterprises	Fed government enterprises	Federal government: Military	Federal government: Nonmilitary	State and local government
1 Sugar crops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 Vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 Tree nuts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 Pineapple	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 Other fruits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 Coffee	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Greenhouse and nursery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 Dairy farm products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 Poultry and eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 Cattle and calves	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11 Hogs, pigs, & swine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 Misc. livestock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 Aquaculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 Forestry and forest products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 Other agricultural products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 Agricultural, forestry, and fishery services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 Landscape and horticultural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 Mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 Single family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 Multiple family construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 New industrial & commercial buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 Hotel construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 Road construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 Other construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 Maintenance & repairs	0.1	0.1	0.2	0.1	0.4	7.4	0.1	0.0	0.0	0.0
27 Pineapple processing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 Other canned and frozen fruits & vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29 Sugar processing	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
30 Confectionery products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 Salted & roasted nuts and seeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32 Meat products	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
33 Milk products	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
34 Grain & bakery products	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
35 Beverages	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
36 Other food and tobacco products	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
37 Apparel and textiles	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
38 Lumber and wood products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39 Furniture & fixtures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40 Paper & allied products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41 Printing & publishing	2.4	2.3	2.8	0.6	5.3	7.9	1.1	0.0	0.0	0.0
42 Chemicals and allied products	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
43 Petroleum refining & products	1.3	1.3	1.8	0.5	0.9	10.6	0.2	0.0	0.0	0.0
44 Rubber & plastic products	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

	109	110	111	112	113	114	115	116	117	118
Industry	Engineering and architectural services	Accounting, auditing, and bookkeeping	Management and consulting services	Research, development and testing	Other services	State and local gov't. enterprises	Fed government enterprises	Federal government: Military	Federal government: Nonmilitary	State and local government
45 Stone, clay, glass, concrete products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46 Primary metals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47 Fabricated metal products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48 Machinery and appliances	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
49 Transportation equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50 Misc. manufacturing products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51 Taxis, limousines, buses	1.2	0.9	1.1	0.3	0.3	0.0	0.5	0.0	0.0	0.0
52 Motor freight transportation & warehousing	0.0	0.0	2.8	0.0	1.1	23.7	10.6	0.0	0.0	0.0
53 Water transportation	0.0	0.0	0.0	0.0	0.1	59.4	0.5	0.0	0.0	0.0
54 Air transportation	0.3	0.3	3.1	0.3	0.6	10.4	4.6	0.0	0.0	0.0
55 Transportation services	0.0	0.0	0.5	0.0	0.2	0.0	1.0	0.0	0.0	0.0
56 Telephone, beeper, cellular	4.7	3.2	2.2	0.8	0.2	13.9	0.2	0.0	0.0	0.0
57 Cable TV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58 Radio and TV broadcasting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59 Other communications	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60 Electricity	1.0	0.2	0.9	0.1	0.7	18.3	0.0	0.0	0.0	0.0
61 Gas production & distribution	0.0	0.0	0.0	0.0	0.3	5.5	0.0	0.0	0.0	0.0
62 Water & sanitary services	0.6	0.4	0.1	0.1	0.2	0.0	0.3	0.0	0.0	0.0
63 Wholesale trade	1.2	1.2	1.2	0.4	1.6	9.5	0.9	0.0	0.0	0.0
64 Eating and drinking	1.3	1.1	3.7	0.7	0.6	0.0	0.0	0.0	0.0	0.0
65 Building materials & gardening	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66 General merchandise stores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67 Food stores	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
68 Automotive dealers & service stations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
69 Apparel & accessory stores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70 Furniture and home furnishings stores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71 Misc. retail	0.0	0.0	0.0	0.0	0.1	5.5	0.2	0.0	0.0	0.0
72 Banking and credit agencies	8.1	2.0	3.6	0.5	0.8	0.0	0.0	0.0	0.0	0.0
73 Security and commodity brokers	0.2	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
74 Insurance and insurance agencies	0.1	0.0	0.3	0.1	0.2	0.0	0.0	0.0	0.0	0.0
75 Owner-occupied dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76 Real estate	5.7	3.2	2.1	0.2	1.8	58.8	2.7	0.0	0.0	0.0
77 Hotels and lodging places	1.6	0.2	0.8	0.2	0.4	0.0	0.0	0.0	0.0	0.0
78 Laundry, cleaning, and shoe repairs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79 Portrait photography	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80 Beauty and barber shops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81 Funeral services and crematories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82 Misc. personal services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83 Advertising	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
84 Photofinishing & commercial photography	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0
85 Services to buildings	0.3	1.2	0.0	0.0	0.5	10.2	0.9	0.0	0.0	0.0
86 Equipment rental and leasing	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87 Employment services	0.3	2.6	5.8	0.8	0.8	11.1	1.0	0.0	0.0	0.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	109	110	111	112	113	114	115	116	117	118
	Engineering and architectural services	Accounting, auditing, and bookkeeping	Management and consulting services	Research, development and testing	Other services	State and local gov't. enterprises	Fed government enterprises	Federal government: Military	Federal government: Nonmilitary	State and local government
88 Computer and data processing services	4.1	2.5	3.4	0.5	0.5	4.3	0.0	0.0	0.0	0.0
89 Security services	0.0	0.0	0.0	0.0	3.9	0.0	2.4	0.0	0.0	0.0
90 Other business services	38.2	0.8	0.2	0.0	0.9	7.7	0.4	0.0	0.0	0.0
91 Auto rental and leasing	1.3	0.0	1.0	0.1	0.6	7.0	0.3	0.0	0.0	0.0
92 Auto repairs and services	0.3	0.1	1.0	0.1	0.2	0.0	1.7	0.0	0.0	0.0
93 Electric repair services	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
94 Misc. repair services	0.0	0.0	0.1	0.0	0.1	6.3	0.0	0.0	0.0	0.0
95 Motion pictures and video rental	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0
96 Theatrical services	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
97 Misc. amusement services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98 Membership sports and recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99 Museums, zoos, and botanical gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Doctors and dentists	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101 Nursing and protective care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102 Hospitals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103 Other medical and health services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104 Legal services	1.4	0.6	0.8	0.1	0.2	0.0	0.0	0.0	0.0	0.0
105 Educational services	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106 Child day care services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107 Residential care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108 Membership organizations	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109 Engineering and architectural services	10.2	0.0	0.6	0.0	0.0	42.6	0.0	0.0	0.0	0.0
110 Accounting, auditing, and bookkeeping	28.3	12.6	1.6	0.2	0.5	0.0	0.6	0.0	0.0	0.0
111 Management and consulting services	0.3	0.3	6.9	0.0	0.5	0.0	0.3	0.0	0.0	0.0
112 Research, development and testing	0.1	0.1	0.0	0.5	0.2	0.0	0.0	0.0	0.0	0.0
113 Other services	0.0	0.0	0.0	5.7	0.0	0.0	0.0	0.0	0.0	0.0
114 State and local gov't. enterprises	3.4	3.1	3.1	0.0	2.2	0.0	0.0	0.0	0.0	0.0
115 Fed gov't. enterprises	0.1	0.1	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0
116 Federal gov't: Military	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117 Federal gov't: Nonmilitary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118 State and local government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total intermediate input	120.2	40.4	52.9	12.9	31.7	320.1	31.1	0.0	0.0	0.0
Value added	392.5	132.4	114.9	84.9	164.1	270.4	117.6	3,203.3	556.5	2,504.7
Labor income	324.6	108.6	101.5	76.2	159.4	188.0	108.2	2,262.3	439.9	2,174.1
Other value added	67.9	23.8	13.4	8.6	4.7	82.4	9.3	941.0	116.5	330.6
Imports	64.1	27.0	35.6	5.2	19.1	86.2	10.6	0.0	0.0	0.0
Total input	576.8	199.8	203.4	103.0	214.9	676.7	159.3	3,203.3	556.5	2,504.7
Wage & salary jobs	5,300.0	2,461.0	2,609.0	2,234.0	7,151.0	5,450.0	2,732.0	83,184.0	13,944.0	72,646.0
Total jobs	8,522.0	3,956.0	4,195.0	3,592.0	9,060.0	5,450.0	2,732.0	83,184.0	13,944.0	72,646.0

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	Total intermediate demand	Final Demand							Total final demand	Total industry output
		Personal consumption expenditures	State & local government	Gross private investment	Federal defense expenditures	Federal civilian expenditures	Visitor expenditures	Exports		
1 Sugar crops	153.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	153.7
2 Vegetables	1.6	8.5	1.4	0.0	0.0	0.0	1.7	23.4	35.0	36.6
3 Tree nuts	31.1	1.2	0.0	0.0	0.0	0.0	0.2	0.0	1.4	32.5
4 Pineapple	52.0	2.6	0.0	0.0	0.0	0.0	4.2	43.4	50.2	102.2
5 Other fruits	2.9	4.0	0.1	0.0	0.0	0.0	0.8	14.7	19.6	22.5
6 Coffee	2.8	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	4.2
7 Greenhouse and nursery products	6.6	6.5	2.0	0.0	0.5	0.2	8.0	45.9	63.1	69.7
8 Dairy farm products	32.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	32.5
9 Poultry and eggs	1.9	11.2	1.4	0.0	0.0	0.0	0.8	0.3	13.7	15.6
10 Cattle and calves	15.4	0.0	0.0	0.0	0.0	0.0	0.0	13.8	13.8	29.2
11 Hogs, pigs, & swine	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5
12 Misc. livestock	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2
13 Aquaculture	0.8	4.3	0.0	0.0	0.0	0.0	0.0	1.3	5.6	6.4
14 Commercial fishing	24.8	18.1	0.5	0.0	0.0	0.0	4.2	15.0	37.8	62.6
15 Forestry and forest products	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.0
16 Other agricultural products	1.9	0.9	2.1	0.0	0.0	0.0	0.2	9.0	12.2	14.1
17 Agricultural, forestry, and fishery services	63.8	2.4	1.0	0.0	0.0	0.0	0.0	26.8	30.2	94.0
18 Landscape and horticultural services	120.0	15.1	1.5	0.0	0.0	0.1	0.0	5.2	21.9	141.9
19 Mining	31.8	0.0	0.0	0.7	0.0	0.0	0.0	2.0	2.7	34.5
20 Single family construction	0.0	0.0	79.1	672.2	40.0	0.0	0.0	0.0	791.3	791.3
21 Multiple family construction	0.0	0.0	66.3	140.3	10.0	0.0	0.0	0.0	216.6	216.6
22 New industrial & commercial buildings	0.0	0.0	0.0	1,087.1	0.0	0.0	0.0	0.0	1,087.1	1,087.1
23 Hotel construction	0.0	0.0	0.0	329.0	0.0	0.0	0.0	0.0	329.0	329.0
24 Road construction	0.0	0.0	473.0	0.0	0.0	0.0	0.0	0.0	473.0	473.0
25 Other construction	0.0	0.0	467.3	0.0	2.5	12.9	0.0	0.0	482.7	482.7
26 Maintenance & repairs	321.2	0.0	62.5	39.3	0.3	3.7	0.0	0.0	105.8	427.0
27 Pineapple processing	0.2	2.5	0.0	0.8	0.0	0.0	1.1	137.2	141.6	141.8
28 Other canned and frozen fruits & vegetables	1.1	55.4	1.3	0.5	0.0	0.0	11.1	14.5	82.8	83.9
29 Sugar processing	21.5	15.7	0.2	1.5	0.0	0.0	1.4	240.1	258.9	280.4
30 Confectionery products	4.7	41.4	1.0	0.4	0.0	0.0	8.2	14.0	65.0	69.7
31 Salted & roasted nuts and seeds	7.1	25.4	0.5	0.5	0.0	0.0	26.3	38.8	91.5	98.6
32 Meat products	16.5	42.7	1.0	0.5	0.0	0.0	8.5	0.0	52.7	69.2
33 Milk products	23.2	80.8	1.9	0.7	0.0	0.0	16.1	0.0	99.5	122.7
34 Grain & bakery products	20.2	48.9	1.4	0.6	0.0	0.0	20.7	0.0	71.6	91.8
35 Beverages	34.7	118.3	2.4	1.2	0.0	0.0	20.3	27.3	169.5	204.2
36 Other food and tobacco products	44.4	72.2	2.1	1.0	0.0	0.0	17.3	26.2	118.8	163.2
37 Apparel and textiles	24.3	36.3	0.0	25.8	0.0	0.0	36.4	45.7	144.2	168.5
38 Lumber and wood products	37.1	0.4	0.0	0.0	0.0	0.0	0.5	5.4	6.3	43.4
39 Furniture & fixtures	1.3	33.2	3.7	0.3	0.0	0.0	1.0	6.7	44.9	46.2
40 Paper & allied products	35.8	2.6	0.2	0.2	0.0	0.0	1.1	0.1	4.2	40.0
41 Printing & publishing	382.9	44.2	13.4	2.7	0.0	0.5	25.0	142.6	228.4	611.3
42 Chemicals and allied products	49.9	8.8	0.2	1.1	0.0	0.0	2.5	11.0	23.6	73.5
43 Petroleum refining & products	793.2	89.2	6.8	6.4	0.2	1.1	20.5	227.0	351.2	1,144.4
44 Rubber & plastic products	15.7	6.6	0.0	0.2	0.0	0.0	1.8	0.0	8.6	24.3

1992 Hawaii State Input-Output Table (in \$ million) (cont.)

Industry	Total intermediate demand	Final Demand							Total final demand	Total industry output
		Personal consumption expenditures	State & local government	Gross private investment	Federal defense expenditures	Federal civilian expenditures	Visitor expenditures	Exports		
45 Stone, clay, glass, concrete products	170.1	6.2	0.1	1.2	0.0	0.1	7.7	38.1	53.4	223.5
46 Primary metals	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6
47 Fabricated metal products	62.5	1.0	0.0	0.4	0.0	0.0	0.0	7.5	8.9	71.4
48 Machinery and appliances	33.3	5.0	0.0	0.3	1.1	0.0	0.0	0.0	6.4	39.7
49 Transportation equipment	22.4	16.0	1.1	16.1	0.2	0.1	0.0	0.0	33.5	55.9
50 Misc. manufacturing products	12.1	12.6	6.2	10.3	0.3	4.8	15.7	11.9	61.8	73.9
51 Taxis, limousines, buses	46.7	62.2	1.7	8.3	0.0	0.0	176.4	0.0	248.6	295.3
52 Motor freight transportation & warehousing	312.3	82.9	6.1	12.5	0.6	4.7	28.9	0.0	135.7	448.0
53 Water transportation	251.7	31.3	0.0	5.9	0.1	0.2	147.9	221.5	406.9	658.6
54 Air transportation	62.1	131.2	17.0	15.0	0.4	0.9	1,099.3	0.0	1,263.8	1,325.9
55 Transportation services	124.1	46.3	2.9	21.7	0.1	0.2	206.1	0.0	277.3	401.4
56 Telephone, beeper, cellular	397.7	180.0	19.6	20.8	0.2	2.2	43.6	75.5	341.9	739.6
57 Cable TV	4.8	58.1	0.0	1.8	0.0	0.0	0.0	0.0	59.9	64.7
58 Radio and TV broadcasting	132.4	1.8	0.0	0.0	0.0	0.0	0.0	14.8	16.6	149.0
59 Other communications	50.1	22.4	0.0	2.3	0.0	0.0	0.0	8.4	33.1	83.2
60 Electricity	376.4	267.0	48.7	0.0	126.0	1.4	0.0	0.0	443.1	819.5
61 Gas production & distribution	34.5	7.6	2.5	0.0	0.1	0.2	0.0	0.0	10.4	44.9
62 Water & sanitary services	95.0	35.5	16.4	0.0	0.0	0.1	0.0	0.0	52.0	147.0
63 Wholesale trade	547.0	414.3	36.2	267.1	0.8	1.1	279.3	347.6	1,346.4	1,893.4
64 Eating and drinking	117.5	830.1	-19.0	0.0	0.1	0.0	1,201.7	0.0	2,012.9	2,130.4
65 Building materials & gardening	10.1	153.2	0.0	4.4	0.0	0.0	0.0	0.0	157.6	167.7
66 General merchandise stores	39.2	306.8	3.1	15.4	0.0	0.0	249.3	0.0	574.6	613.8
67 Food stores	32.9	279.4	0.0	0.0	0.0	0.0	214.2	0.0	493.6	526.5
68 Automotive dealers & service stations	26.1	312.4	0.0	11.3	0.0	0.0	90.9	0.0	414.6	440.7
69 Apparel & accessory stores	28.9	218.3	0.0	10.9	0.0	0.0	175.6	0.0	404.8	433.7
70 Furniture and home furnishings stores	14.9	200.4	0.0	5.6	0.0	0.0	0.0	0.0	206.0	220.9
71 Misc. retail	60.7	272.0	0.0	17.2	0.0	0.0	670.9	0.0	960.1	1,020.8
72 Banking and credit agencies	855.0	953.4	48.6	0.0	0.0	0.0	7.5	363.6	1,373.1	2,228.1
73 Security and commodity brokers	39.6	50.2	0.0	0.0	0.0	0.0	0.0	2.0	52.2	91.8
74 Insurance and insurance agencies	396.0	163.2	333.6	0.0	0.0	0.6	1.1	36.3	534.8	930.8
75 Owner-occupied dwellings	0.0	1,258.0	0.0	0.0	0.0	0.0	0.0	0.0	1,258.0	1,258.0
76 Real estate	957.8	2,348.6	79.2	0.0	0.1	1.0	628.6	171.2	3,228.7	4,186.5
77 Hotels and lodging places	32.2	93.0	0.9	0.0	0.0	0.1	2,136.0	0.0	2,230.0	2,262.2
78 Laundry, cleaning, and shoe repairs	32.2	47.9	0.0	0.0	0.0	0.0	12.0	0.0	59.9	92.1
79 Portrait photography	8.3	7.0	0.0	0.0	0.0	0.0	0.5	0.3	7.8	16.1
80 Beauty and barber shops	0.0	34.2	0.0	0.0	0.0	0.0	30.9	0.0	65.1	65.1
81 Funeral services and crematories	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	15.0
82 Misc. personal services	19.1	37.0	0.0	0.0	0.0	0.0	4.6	0.7	42.3	61.4
83 Advertising	57.5	2.1	2.9	0.0	0.0	0.0	0.0	4.1	9.1	66.6
84 Photofinishing & commercial photography	90.1	2.3	0.0	0.0	0.0	0.0	6.8	6.9	16.0	106.1
85 Services to buildings	158.7	25.7	0.9	0.0	0.0	0.4	0.0	0.0	27.0	185.7
86 Equipment rental and leasing	114.8	8.3	16.5	0.0	0.0	0.5	0.0	0.0	25.3	140.1
87 Employment services	148.7	20.5	0.0	0.0	0.3	0.4	0.0	0.0	21.2	169.9

**APPENDIX B. COMPARISON BETWEEN 1987 AND 1992
HAWAII INPUT-OUTPUT CATEGORIES**

Industry Listing in 1987 and 1992 Hawaii I-O Tables

1992 I-O Table		1987 I-O Table		1987 SIC
No.	Industry	No.	Industry	
1	Sugar crops	1	Sugarcane	0133
4	Pineapple	2	Pineapple	0179p*
27	Pineapple processing	3	Pineapple Canning	2033p
29	Sugar processing	4	Sugar Processing	2061-2
10	Cattle and calves	5	Beef And Hogs	019p, 021p, 027p, 025p
11	Hogs, pigs, & swine			
8	Dairy farm products	6	Dairy Farm Products	019p, 024p, 025p, 029p
9	Poultry and eggs	7	Poultry	019p, 021p, 025p, 029p
13	Aquaculture	8	Fishing And Forestry Products	08, 09
14	Commercial fishing			
15	Forestry and forest products			
3	Tree nuts	9	Tree Nuts	0173
7	Greenhouse and nursery products	10	Nursery & Greenhouse Products	018p, 019p, 021p, 025p, 029p
2	Vegetables	11	Other Agricultural Products	Other 01, 02
5	Other fruits			
6	Coffee			
12	Misc. livestock			
16	Other agricultural products			
19	Mining	12	Mining	10-14
32	Meat products	13	Meat Products	201
33	Milk products	14	Milk Products	202
34	Grain & bakery products	15	Bakery Products	205
35	Beverages	16	Beverages	208
28	Other canned & frozen fruits & vegetables	17	Other Food Products	Other 20
30	Confectionery products			
31	Salted & roasted nuts and seeds			
36	Other food and tobacco products			
37	Apparel and textiles	18	Textiles And Apparel	22, 23
38	Lumber and wood products	19	Lumber And Wood Products	24
39	Furniture & fixtures	20	Furniture And Fixtures	25
40	Paper & allied products	21	Paper And Paper Products	26
41	Printing & publishing	22	Printing And Publishing	27
42	Chemicals and allied products	23	Chemicals And Allied Products	28
43	Petroleum refining & products	24	Petroleum Refining	29
44	Rubber & plastic products	25	Rubber, Plastic, And Leather	30, 31
45	Stone, clay, glass, concrete products	26	Cement, Stone, And Clay	32
46	Primary metals	27	Primary Metals	33
47	Fabricated metal products	28	Fabricated Metal Products	34
48	Machinery and appliances	29	Machinery	35, 36
49	Transportation equipment	30	Transportation Equipment	37
50	Misc. manufacturing products	31	Miscellaneous Manufacturing	38, 39
20	Single family	32	Single-Family Construction	15p, 16p, 17p
21	Multiple family	33	Multi-Family Construction	15p, 16p, 17p
23	Hotel	34	Hotel Construction	15p, 16p, 17p
22	New industrial & commercial buildings	35	Commercial Construction	15p, 16p, 17p
24	Road construction	36	Other Construction	15p, 16p, 17p
25	Other construction			
26	Maintenance & repairs	37	Maintenance And Repair	15p, 16p, 17p
52	Motor freight transport and warehousing	38	Trucking And Warehousing	42

Industry Listing in 1987 and 1992 Hawaii I-O Tables (cont.)

		1987 I-O Table	
	Industry		Industry
55	Water transportation	39	Ocean Transportation
54	Taxis, limousines, buses	41	Local Ground Transportation
56	Cable TV	43	Electricity
	Radio and TV broadcasting		
	Other communications		
	Electricity		
61	Water, sewerage, & sanitary services	45	Water And Sanitary Services
63	Building materials & gardening	47	Retail Trade
66			
67			
68			
69			
70			
71			
64	Banking and credit agencies	49	Finance And Insurance
73			
74			
75	Real estate	51	Hotels
	Hotels and lodging places		
78	Portrait photography	53	Business Services
	Beauty and barber shops		
	Funeral services and crematories		
	Misc. personal services		
	Agricultural, forestry, and fishery services		
18			
83			
84			
85			
86			
87			
88			
89			
90			
91	Auto repairs and services	55	Amusement Services
	Electric repair services		
	Misc. repair services		
	Motion pictures and video rental		
96			
97			
98			
99			

Industry Listing in 1987 and 1992 Hawaii I-O Tables (cont.)

1992 I-O Table		1987 I-O Table		1987 SIC
No.	Industry	No.	Industry	
100	Doctors and dentists	57	Health & Professional Services	80, 81, 87, 89
101	Nursing and protective care			
102	Hospitals			
103	Other medical and health services			
104	Legal services			
109	Engineering and architectural services			
110	Accounting, auditing , and bookkeeping			
111	Management and consulting services			
112	Research, development and testing			
105	Educational services	58	Education And Other Services	82, 83 86, 88
106	Child day care services			
107	Residential care			
108	Membership organizations			
113	Other services			
119	Inventory valuation adjustment	59	Government Enterprises	Postal service
114	State and local govt. enterprises			
115	Fed govt. enterprises	60	Other Industries (Government)	Other government
116	Federal govt: Military			
117	Federal govt. Nonmilitary			
118	State and local government			

**APPENDIX C. COMPARISON BETWEEN 1992 HAWAII, 1992
IMPLAN, AND 1987 BEA INPUT-OUTPUT CATEGORIES**

Comparison Between 1992 Hawaii, 1992 IMPLAN, and 1987 BEA Input-Output Categories

SN	1992 HI Industry Classification	IMPLAN #	1987 BEA Classification	SIC Codes
1	Sugarcane	19	2.0502	0133
2	Vegetables	18	2.0601	0161
3	Tree nuts	17	2.0402	0173
4	Pineapple		pt of 2.0401	0179
5	Other fruits		pt of 2.0401	other 0170-0179
6	Coffee		pt of 2.0401	0179
7	Greenhouse and nursery products		2.0702	0181-0182
8	Dairy farm products	1	1.0100	0240-0249
9	Poultry and eggs	2	1.0200	0250-0259
10	Cattle and calves			
	Ranch fed cattle	3	pt of 1.0301	0212
	Range fed cattle	4	pt of 1.0301	0212
	Cattle feed lots	5	pt of 1.0301	0211
11	Hogs, pigs, & swine	7	1.0301	0213
12	Misc. livestock		pt of 1.0302	0214;other 021
	Sheep, lambs, and goats	6	pt of 1.0301	0214
				pt of 0191;0212;0219;
	Other meat animal products	8	pt of 1.0301	0259;0291
	Miscellaneous livestock	9	1.0302	0271;0272
13	Aquaculture		pt of 1.0302	0273
14	Commercial fishing	25	3.0002	0910
15	Forestry and forest products			
				pt of 0181;0191;0219;
	Forest products	22	2.0701	0259;0291
	Forestry products	24	3.0001	0810;0830;0970
16	Other agricultural products			
				0139;0191;0219;
	Hay and pasture	13	pt of 2.0202	0259;0291
				0119;0139;0191;
	Miscellaneous crops	20	2.0503	0219;0259;0291
				0710;0720;0750;0760;
17	Agricultural, forestry, and fishery services	26	4.0001	0254;0850;0920
18	Landscape and horticultural services	27	4.0002	0780
19	Mining			
	Metal mining services	34	6.0200	1080
	Natural gas and crude petroleum	38	pt 8.0000	1310
	Dimension stone	40	pt 9.0001	1410;1420
	Sand and gravel	41	pt 9.0002	1440
20	Single family construction		pt of 11.0000	1521
21	Multiple family construction		pt of 11.0000	1522
22	New industrial & commercial buildings		pt of 11.0000	1541;1542
23	Hotel construction		pt of 11.0000	
24	Road construction	51	11.0400	pt 15;16;17
25	Other construction	57	pt of 12.0215	1389
	New mineral extraction facilities	53	11.0600	pt 15;16;17
	New government facilities	54	11.0700	pt 15;16;17
26	Maintenance & repairs			
	Maintenance & repair, residential	55	12.0100	pt 15;16;17
	Maintenance & repairs other facilities	56	12.0200	pt 15;16;17
	Maintenance & repairs oil and gas wells	57	12.0215	1380
27	Pineapple processing	71	14.1302	part of 2038,2030
28	Canned and frozen fruits and vegetables			
	Canned fruits and vegetables	67	14.0900	2033
	Dehydrated food products	68	14.1000	2034

Comparison Between 1992 Hawaii, 1992 IMPLAN, and 1987 BEA Input-Output Categories
(cont.)

SN	1992 HI Industry Classification	IMPLAN #	1987 BEA Classification	SIC Codes
	Pickles, sauces, and salad dressing	69	14.1100	2035
	Frozen fruits, juices and vegetables	70	14.1301	2037
29	Sugar processing	81	14.1900	2061;2062;2063
30	Confectionery products	82	14.2001	2064
31	Salted & roasted nuts and seeds			
	Salted & roasted nuts and seeds	85	14.2004	2068
	Roasted coffee	99	14.2800	2095
32	Meat products			
	Meat packing plants	58	14.0101	2011
	Sausage and other prepared meats	59	14.0102	2013
	Poultry processing	60	14.0103;14.0104	2015
33	Milk products			
	Ice cream and frozen desserts	64	14.0500	2024
	Fluid milk	65	14.0600	2026
34	Grain & bakery products			
	Flour and other grain mill products	72	14.1401	2041
	Blended and prepared flour	75	14.1403	2045
	Prepared feeds, n.e.c.	78	14.1502	2048
	Bread, cake, and related products	79	14.1801	2051;2053
	Cookies and crackers	80	14.1802	2052
35	Beverages			
	Malt beverages	91	14.2101	2082
	Wines, brandy, and brandy spirits	93	14.2103	2084
	Distilled liquor, except brandy	94	14.2104	2085
	Bottled and canned soft drinks and water	95	14.2200	2086
	Flavoring extracts and syrups, n.e.c.	96	14.2300	2087
36	Other food and tobacco products			
	Vegetables oil mills, n.e.c.	88	14.2600	2076
	Animal and marine fats and oils	89	14.2700	2077
	Shortening and cooking oils	90	14.2900	2079
	Canned and cured sea foods	97	14.0700	2091
	Prepared fresh or frozen fish or seafood	98	14.1200	2092
	Potato chips and similar snacks	100	pt 14.3200	2096
	Manufactured ice	101	14.3000	2097
	Macaroni and spaghetti	102	14.3100	2098
	Food preparations, n.e.c.	103	pt 14.3200	2099
	Chewing and smoking tobacco	106	15.0103	2130
37	Apparel and textiles			
				2210;2220;2230;2261;
	Broadwoven fabric mills and finishing	108	16.0100	2262
	Yarn mills and finishing of textiles n.e.c.	116	16.0300	2269;2281;2282
	Carpets and rugs	117	17.0100	2270
				2310;2320;2330;2340;
	Apparel made from purchased materials	124	18.0400	2350;2360;2370;2380
	Curtains and draperies	125	19.0100	2391
	Housefurnishings, n.e.c.	126	19.0200	2392
	Canvas products	128	19.0302	2394
	Pleating and stitching	129	19.0303	2395
	Automotive and apparel trimmings	130	19.0304	2396
	Fabricated textile products, n.e.c.	132	19.0306	2399
38	Lumber and wood products			
	Sawmills and planing mills, general	134	20.0200	2421
	Millwork	137	20.0501	2431
	Wood kitchen cabinets	138	20.0502	2434
	Structural wood members, n.e.c.	140	20.0701	2439

Comparison Between 1992 Hawaii, 1992 IMPLAN, and 1987 BEA Input-Output Categories
(cont.)

SN	1992 HI Industry Classification	IMPLAN #	1987 BEA Classification	SIC Codes
	Wood pallets and skids	142	20.0901	2448
	Wood preserving	145	20.0800	2491
	Wood products, n.e.c.	147	20.0903	2499
39	Furniture & fixtures			
	Wood household furniture	148	22.0101	2511
	Upholstered household furniture	149	22.0200	2512
	Metal household furniture	150	22.0300	2514
	Mattresses and bedsprings	151	22.0400	2515
	Household furniture, n.e.c.	153	22.0102	2519
	Wood office furniture	154	23.0100	2521
	Metal office furniture	155	23.0200	2522
	Wood partitions and fixtures	157	23.0400	2541
	Metal partitions and fixtures	158	23.0500	2542
	Blinds, shades, and drapery hardware	159	23.0600	2591
	Furniture and fixtures, n.e.c.	160	23.0700	2599
40	Paper & allied products			
	Pulp mills	161	24.0100	2610
	Paperboard containers and boxes	164	25.0000	2650
	Bags, plastic	167	pt 24.0702	2673
	Envelops	171	24.0400	2677
	Converted paper products, n.e.c.	173	24.0704;24.0706	2679
41	Printing & publishing			
	Newspapers	174	26.0100	2710
	Periodicals	175	26.0200	2720
	Book publishing	176	26.0301	2731
	Book printing	177	26.0302	2732
	Miscellaneous publishing	178	26.0400	2740
	Commercial printing	179	26.0501	2750
	Blank books and loose-leaf binders	182	26.0602	2782
	Bookbinding and related	183	26.0802	2789
	Typesetting	184	26.0803	2791
	Plate making	185	26.0801;26.0804	2796
42	Chemicals and allied products			
	Industrial gases	187	27.0102	2813
	Synthetic rubber	192	28.0200	2822
	Drugs	195	29.0100	2830
	Toilet preparations	199	29.0300	2844
	Gum and wood chemicals	201	27.0401	2861
	Nitrogenous and phosphoric fertilizers	202	27.0201	2873;2874
	Chemicals and allied products (cont.)			
	Fertilizers, mixing only	203	27.0202	2875
	Adhesives and sealants	205	27.0402	2891
	Chemical preparations, n.e.c.	209	27.0406	2899
43	Petroleum refining & products			
	Petroleum refining	210	31.0101	2910
	Paving mixtures and blocks	211	31.0200	2951
44	Rubber & plastic products			
	Rubber and plastics footwear	216	32.0200	3020
	Fabricated rubber products, n.e.c.	219	32.0301;32.0302	3060
	Miscellaneous plastics products	220	32.0400	3080
45	Stone, clay, glass, & concrete products			
	Glass and glass products, except containers	230	35.0100	3210;3229;3230
	Cement, hydraulic	232	36.0100	3240

Comparison Between 1992 Hawaii, 1992 IMPLAN, and 1987 BEA Input-Output Categories
(cont.)

SN	1992 HI Industry Classification	IMPLAN #	1987 BEA Classification	SIC Codes
	Pottery products, n.e.c.	241	36.0900	3269
	Concrete block and brick	242	36.1000	3271
	Concrete products, n.e.c.	243	36.1100	3272
	Ready-mixed concrete	244	36.1200	3273
	Cut stone and stone products	247	36.1500	3280
	Mineral wool	251	36.2000	3296
	Nonmetallic mineral products, n.e.c.	253	36.2200	3299
46	Primary metals			
	Blast furnaces and steel mills	254	37.0101	3312
	Brass, bronze, and copper foundries	269	38.1200	3364;3366
47	Fabricated metal products			
	Metal cans	273	39.0100	3411
	Hardware, n.e.c.	278	42.0300	3429
	Metal doors, sash, and trim	283	40.0500	3442
	Fabricated plate work(boiler shops)	284	40.0600	3443
	Sheet metal work	285	40.0700	3444
	Architectural metal work	286	40.0800	3446
	Miscellaneous metal work	288	40.0902	3449
	Plating and polishing	295	42.0401	3471
	Steel springs, except wire	302	42.0700	3493
	Pipe, valves, and pipe fittings	303	pt 42.0800	3494;3498
48	Machinery and appliances			
	Steam engines and turbines	307	43.0100	3511
	Farm machinery and equipment	309	44.0001	3523
	Food products machinery	330	pt 48.0100	3556
	Blowers and fans	334	49.0300	3564
	General industrial machinery, n.e.c.	338	pt 49.0700	3569
	Calculating and accounting machine	343	51.0102	3578
	Service industry machines, n.e.c.	349	52.0500	3589
	Industrial machines, n.e.c.	354	PT 50.0002	3599
	Electrical industrial apparatus, n.e.c.	360	53.0800	3629
	Lighting fixtures and equipment	369	55.0200	3645;3646;3647;3648
	Phonograph records and tape	371	56.0200	3652
	Telephone and telegraph apparatus	372	56.0300	3661
	Radio and TV communication equipment	373	pt 56.0400	3663
	Communications equipment, n.e.c.	374	pt 56.0400	3669
	Semiconductors and related devices	377	57.0200	3674
	Magnetic and optical recording media	382	pt 51.0101,pt 57.0300	3695
49	Transportation equipment			
	Truck and bus bodies	385	59.0100	3713
	Motor vehicle parts and accessories	386	59.0302	3714
	Truck trailers	387	59.0200	3715
	Aircraft	389	60.0100	3721
	Aircraft and missile engines and parts	390	60.0200	3724;3764
	Ship building and repairing	392	61.0100	3731
	Boat building and repairing	393	61.0200	3732
	Transportation equipment (cont.)			
	Travel trailers and campers	397	61.0601	3792
50	Misc. manufacturing products			
	Shoes, except rubber	224	34.0201	3143;3144;3149
	Personal leather goods	228	34.0304	3172
	Search and navigation equipment	400	pt 62.0100	3812
	Mechanical measuring devices	403	pt 62.0100, 62.0202	3823;3824;3829
	Surgical and medical instruments	407	62.0400	3841
	Surgical appliances and supplies	408	62.0500	3842

Comparison Between 1992 Hawaii, 1992 IMPLAN, and 1987 BEA Input-Output Categories
(cont.)

SN	1992 HI Industry Classification	IMPLAN #	1987 BEA Classification	SIC Codes
	Dental equipment and supplies	409	62.0600	3843
	X-ray apparatus	410	pt 58.0300	3844
	Electromedical apparatus	411	pt 58.0300	3845
	Ophthalmic goods	412	63.0200	3850
	Watches, clocks and parts	414	62.0700	3870
	Jewelry, precious metal	415	64.0101	3911
	Musical instruments	418	64.0200	3930
	Dolls	419	64.0302	3942
	Sporting and athletic goods, n.e.c.	421	64.0301	3944
	Marking devices	424	64.0503	3953
	Costume jewelry	426	64.0105	3961
	Brooms and brushes	428	64.0800	3991
	Signs and advertising displays	429	64.1100	3993
	Burial caskets and vaults	430	64.1000	3995
	Manufacturing industries, n.e.c.	432	64.0600, 64.1200	
51	Taxis, limousines, & buses			
	Local, interurban passenger transit	434	65.0200	pt of 4100
	Local government passenger transit	510	79.0100	pt of 4100
52	Motor freight transport and warehousing	435	65.0300	4200
53	Water transportation	436	65.0400	4400
54	Air transportation	437	65.0500	4500
55	Transportation services			
	Arrangement of passenger transportation	439	65.0702	4720
	Transportation services	440	65.0701	4730;4783;4785
56	Telephone, beeper, & cellular			
57	Cable TV			
58	Radio and TV broadcasting	442	67.0000	4830
59	Other communications			
60	Electricity	443	68.0100	4910
61	Gas production & distribution	444	68.0200	4920
62	Water and sanitary services			
	Water supply and sewerage systems	445	68.0301	4940;4952
	Sanitary services and steam supply	446	68.0302	4953;4959;4960;4970
63	Wholesale trade	447	69.0100	5000;5100
64	Eating and drinking	454	74.0000	5800
65	Building materials & gardening	448	pt 69.0200	5200
66	General merchandise stores	449	pt 69.0200	5300
67	Food stores	450	pt 69.0200	5400
68	Automotive dealers & service stations	451	pt 69.0200	5500
69	Apparel & accessory stores	452	pt 69.0200	5600
70	Furniture and home furnishings stores	453	pt 69.0200	5700
71	Misc. retail	455	pt 69.0200	5900
72	Banking and credit agencies			
	Banking	456	70.0100	6000
	Credit agencies	457	70.0200	6100;6710;6720;6733;
73	Security and commodity brokers	458	70.0300	6790
74	Insurance and insurance agencies			6200
	Insurance carriers	459	70.0400	6300
	Insurance agents and brokers	460	75.0500	6400
75	Owner-occupied dwellings	461	71.0100	
76	Real estate	462	71.0201;71.0202	6500
77	Hotels and lodging places	463	72.0100	7000

Comparison Between 1992 Hawaii, 1992 IMPLAN, and 1987 BEA Input-Output Categories
(cont.)

SN	1992 HI Industry Classification	IMPLAN #	1987 BEA Classification	SIC Codes
78	Laundry, cleaning, and shoe repairs	464	72.0201	7210;7250
79	Portrait photography	465	pt 72.0203	7220
80	Beauty and barber shops	466	72.0300	7230;7240
81	Funeral services and crematories	467	72.0202	7260
82	Misc. Personal services			
	Miscellaneous personal services	468	pt 72.0203	7290
	Household industry-low income	525	pt 84.0000	8800
83	Advertising	469	73.0200	7310
84	Photofinishing and commercial photography	471	73.0108	7334;7335;7336;7384
85	Services to buildings	472	73.0102	7340
86	Equipment rental & leasing	473	73.0107	7350
87	Employment services	474	73.0103	7360
88	Computer and data processing services	475	73.0104	7370
89	Security services	476	73.0106	7381;7382 7320;7331;7338;7383;
90	Other business services	470	73.0109	7389
91	Auto rental & leasing	477	75.0001	7510
92	Auto repairs and services			
	Automobile parking and car wash	478	75.0003	7520;7542
	Automobile repair and services	479	75.0002	7530;7549
93	Electric repair services	480	72.0204	7620
94	Misc. repair services			
	Watch, clock, jewelry and furniture repair	481	72.0205	7630;7640
	Miscellaneous repair shops	482	73.0101	7690
95	Motion pictures and video rental	483	76.0100	7800
96	Theatrical services	484	76.0201	7920
97	Misc. amusement services			
	Bowling alleys and pool halls	485	76.0202	7930
	Commercial sports except racing	486	76.0203	7941
	Amusement and recreation services, n.e.c.	488	76.0206	7910;7991;7992;7993; 7996;7999
98	Membership sports and recreation	489	76.0205	7997
99	Museums, zoos and botanical gardens			
100	Doctors and dentists	490	77.0100	8010;8020;8030;8040
101	Nursing and protective care	491	77.0301	8050
102	Hospitals	492	77.0200	8060
103	Other medical and health services	493	77.0302	0740;8070;8080;8090
104	Legal services	494	73.0301	8110
105	Educational services			
	Elementary and secondary schools	495	77.0401	8210
	Colleges, universities, schools	496	77.0402	8220
	Other educational services	497	77.0403	8230;8240;8290
106	Child day care services	499	77.0700	8350
107	Residential care	501	77.0800	8360
108	Membership organizations			
	Business associations	503	77.0501	8610;8620
	Labor and civic organizations	504	77.0502	8630;8640
	Religious organizations	505	77.0503	8660
109	Engineering and architectural services	506	73.0302	8710
110	Accounting, auditing , and bookkeeping	507	73.0303	8720;8990
111	Management and consulting services	508	pt 73.0105	8740
112	Research, development and testing	509	pt 73.0105	8730
113	Other services			
	Job training and related services	498	77.0600	8330
	Social services, n.e.c.	500	77.0900	8320;8390

**Comparison Between 1992 Hawaii, 1992 IMPLAN, and 1987 BEA Input-Output Categories
(cont.)**

SN	1992 HI Industry Classification	IMPLAN #	1987 BEA Classification	SIC Codes
	Other nonprofit organizations	502	77.0504	8400;8650;8690;6732; 8922
114	State and local govt. enterprises	512	79.0300	
115	Fed govt. enterprises			
	U.S. postal service	513	78.0100	4311
	Other federal government enterprises	515	78.0400	
116	Federal govt.: defense	519	pt 82.0000	
117	Federal govt.:non-defense	520	pt 82.0000	
118	State and local government			
	State and local government -education	522	pt 82.0000	
	State and local government -non education	523	pt 82.0000	